#### VINSON & ELKINS L.L.P. ATTORNEYS AT LAW

2300 FIRST CITY TOWER 1001 FANNIN HOUSTON, TEXAS 77002-6760 TELEPHONE (7/3) 758-2222 FAX (713) 758-2346

16 ALEXEY TOLSTOY STREET

SECOND FLOOR
MOSCOW 103001. RUSSIAN FEDERATION

TELEPHONE OII 170-95) 956-1995

SATELLITE FAX (713) 758-4952

FAX OII (70-95) 956-1996

ONE AMERICAN CENTER 600 CONGRESS AVENUE AUSTIN, TEXAS 78701-3200

TELEPHONE (512) 495-8400 FAX (512) 495-8612

WRITER'S DIRECT DIAL

(512) 495-8568

March 2, 1995

3700 TRAMMELL CROW CENTER 2001 ROSS AVENUE
DALLAS, TEXAS 75201-2975
TELEPHONE (214) 220-7700 FAX (214) 220-7716

THE WILLARD OFFICE BUILDING 1455 PENNSYLVANIA AVE., N.W. WASHINGTON, D.C. 20004-1008 TELEPHONE (202) 639-6500 FAX (202) 639-6604

47 CHARLES ST., BERKELEY SQUARE LONDON WIX 7PB, ENGLAND TELEPHONE OII (44-71) 491-7236 FAX OII 144-711 499-5320

#### VIA FEDERAL EXPRESS

Mr. Lance Richman U.S. Environmental Protection Agency North New Jersey, Section 2 26 Federal Plaza Suite 13-100 New York, New York 10278

> **BASF** Corporation Re:

Dear Lance:

As I have discussed with Patricia Hick, enclosed please find a memorandum commenting on the response of BASF Corporation to the EPA's request for information under Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act. The memorandum is accompanied by a number of documents, indexed and bound for your ready reference.

Please do not hesitate to contact me if you or any members of your team have questions or comments. We look forward to working with you.

Vefy truly yøurs,

Amanda G. Birrell

0695:2312 Enclosures

RECEIVED MAR 06 1995

cc:

Ms. Patricia C. Hisk Gerald R. Connolly

#### MEMORANDUM

#### March 2, 1995

TO:

Lance Richman

FROM:

Maxus Energy Corporation, Responding on Behalf of Occidental Chemical

Corporation

RE:

**BASF** Corporation

#### **Purpose and Scope:**

This memorandum analyzes the response of BASF to EPA's Request for Information ("Response") dated January 28, 1994, in view of the documents submitted with the Response and information Maxus has collected. Documents submitted by BASF as part of its Response are referred to as Exhibits to the Response. The documents submitted by Maxus are collected at Tabs 1-6 attached to this memorandum and are referred to by tab number.

In response to your request, Maxus has drafted additional 104(e) requests for EPA. Below each open issue discussed in this memorandum are the specific 104(e) questions that relate to that issue. In addition, attached to this memorandum is a complete set of the recommended 104(e) requests.

#### **Status of Liability Claim:**

Based on information received to date, BASF either admits or it can be inferred that:

- 1. BASF used or generated substantial quantities of hazardous substances at its facility at 50 Central Avenue, Kearny, New Jersey. Among the hazardous substances were several dioxin precursors including phthalic anhydride ("PA") and maleic acid. PA is a listed RCRA hazardous waste (UI90), 40 C.F.R. § 261.33, and is therefore a CERCLA hazardous substance. 42 U.S.C. § 9601(14)(C).
- 2. Both PA and maleic acid are Class III dioxin precursors (EPA, 1980). Another raw material utilized at the site, 2,6-dibromo-p-nitroaniline, see document attached at Tab 1, is a dioxin precursor chemical specifically regulated by EPA under the Toxic Substances Control Act. 40 C.F.R. §§ 707 & 766. Large quantities of other hazardous substances were also used or produced at the plant. See Response, Exhibit B. In 1989, the plant

- generated more than 100 tons of hazardous waste, including over 1.5 million pounds of bis(2-ethylhexyl)phthalate and over 23,000 pounds of PA. See 1989 Hazardous Waste Generator Annual Report attached at Tab 2.
- 3. BASF reports that substances, including PA and bis(2-ethylhexyl)phthalate, were either spilled or discharged at the site on fifty-eight separate occasions between 1973 and 1990. Response, Exhibit D. In addition, from 1976 to 1989, the Kearny Fire Department documented ten responses to chemical fires and emergencies at BASF.
- 4. A 1993 ECRA sampling plan implemented by BASF established the following constituents in soils at the site: total petroleum hydrocarbons, base neutrals, volatile organics, PCBs, pesticides, arsenic, and bis(2-ethylhexyl)phthalate. See NJDEP Response to BASF's Sampling Plan attached at Tab 3. These constituents were found at various locations around the plant site, including the former waste water lagoon area and production areas. *Id.* at 4-13. Base neutrals were also found near the former storm water outfall. *Id.* at 10.
- 5. Because the site floods and because storm water from the property discharged to the Passaic River, Response at 6, many of the hazardous substances spilled or discharged on site were discharged to the Passaic River. In addition, in 1973, a spill of 2,500 barrels of 2-ethyl-hexanol drained into the Passaic River from the facility. See Excerpt from 1973 PVSC Annual Report attached at Tab 4.
- 6. Passaic River sediment samples adjacent to the BASF facility indicate the presence of bis(2-ethylhexyl)phthalate, phenanthrene, mercury, arsenic, PCBs and other hazardous substances. These hazardous substances are either known to have been present on the BASF site or known to have been used in the manufacture of phthalic anhydride, dyes, or plasticizers.

#### **Open Issues:**

1. BASF's Response does not discuss the use of its incinerator to treat waste water and makes no mention of the handling of waste water discharges prior to construction of its incinerator in 1971. Public records suggest that from 1971 until the initiation of a waste water pretreatment program, BASF incinerated process water and potentially contaminated storm water. The combustion of process wastes containing dioxin precursors such as PA could generate dioxins. See BASF Proposal Regarding Waste Water Treatment Plant attached at Tab 5. EPA has identified incinerators as the principal source of dioxins. (EPA, Estimating Exposure to Dioxin-Like Compounds, June 1994). EPA considers PA a dioxin precursor. EPA should seek further information about the content and disposition of waste water before 1971. EPA should confirm which waste waters of BASF were incinerated after 1971,

as well as elicit a detailed description of the handling and storage of waste water on site throughout the entire period of operation.

A specific 104(e) request to elicit this information is provided below:

#### 104(e) Request No. 1:

- 1. Describe in detail, by period of operation, all the ways that process waste water, including sludges, and storm water was disposed of or managed by BASF from 1966 to the present including, but not limited to:
  - a. when the waste water pre-treatment program was initiated by BASF;
  - b. how waste waters and potentially contaminated storm waters were managed by BASF prior to the initiation of the pretreatment program;
  - c. the composition of waste waters from BASF's various operations;
  - d. when BASF received its permit for the storm water outfall;
  - e. where and how storm water was disposed of prior to the receipt of the permit for the outfall;
  - f. how potentially contaminated storm water was managed;
  - g. how waste water or potentially contaminated storm waster was stored on the property;
  - h. which waste waters were incinerated; and
  - i. what combination of waste waters were incinerated.

Include in your response a flowchart detailing the generation and final disposition of all waste water produced by BASF from 1966 to the present.

2. EPA should also elicit a thorough description of the operation of the incinerator. From 1971, phthalic anhydride sludge, in addition to waste water, was incinerated on the BASF site. Because formation of dioxins is associated with incinerators, and because PA and maleic acid are dioxin precursors, the BASF incinerator is a potential source of dioxins to the River. (Esposito, 1980).

As background, the BASF incinerator had several operational problems. On July 19, 1988, NJDEP issued an Administrative Order/Notice of Civil Administrative Penalty Assessment to BASF, based on emission exceedances for sulfur dioxide and hydrogen halides. See NJDEP Notice of Final Denial of Hazardous Waste Incinerator Permit attached at Tab 6. In addition, a fine was also assessed against BASF in 1989 for exceedances of particulate, sulfur oxide and hydrocarbon emissions. See NJDEP Hazardous Waste Generator Annual Report attached at Tab 2. BASF finally had to close the incinerator in 1989 because it failed to satisfy the emission standard for particulates during a trial burn. See NJDEP Notice of Final Denial of Hazardous Waste Incinerator Permit attached at Tab 6.

Specific 104(e) questions to elicit the information needed are provided below:

#### 104(e) Request No. 2:

2. Describe the use and operation of any incinerators at the property including, but not limited to, when the incinerator was constructed, the chemical composition of the materials incinerated, the volume of materials incinerated, how many years the incinerator was operated, and the feed rates of the incinerator. Provide in your response documents relating to the use or operation of the incinerator, concluding the results of any trial burns conducted on the incinerator and stack test sampling.

#### 104(e) Request No. 3:

- 3. Please describe in detail which BASF process generated the process waste water that was incinerated, how often this process waste water was incinerated, and with what (if anything) the process waste water was combined with before incineration.
- 3. EPA should also elicit more information about prior owners of the facility. During the period 1936-1966, the site was owned by the United Cork Companies ("United Cork"). United Cork manufactured various cork products at the site, including cork insulation, bottle stoppers and caps and cork insoles for shoes. The process United Cork used to clean and remove lignin from the raw cork materials (i.e., chlorine bleaching) could have resulted in the formation of dioxins. Waste waters from this process may have discharged directly to the Passaic River. In 1966, United Cork was purchased by BASF, thus BASF acquired United Cork's liabilities and responsibilities for responding to requests for information (including CERCLA 104(e) requests for information) concerning the facility.

Specific 104(e) questions to elicit this information are provided below:

#### 104(e) Request No. 4:

4. Describe in detail the transaction between BASF and United Cork Company for the property at 50 Central Avenue, Kearny, New Jersey including, but not limited to, the nature of the transaction (merger, asset purchase. etc.), the year of the transaction, any agreements regarding the assumption or acquisition of liabilities, any guarantees, and any investigations performed by BASF regarding the property.

#### 104(e) Request No. 5:

5. Describe the manufacturing processes of United Cork Company conducted on the property including, but not limited to, the equipment used in the processes, all raw materials used, the volume of raw materials used, and all substances produced or that were a by-product of operations of United Cork.

#### 104(e) Request No. 6:

6. Describe the process used by United Cork to clean and remove lignin in the manufacture of cork products.

#### 104(e) Request No. 7:

- 7. Describe in detail, how process waste waters, storm water and sanitary waters were disposed of or managed by United Cork Company at the property.
- 4. Given the high volume of EPA-recognized dioxin precursors used at the facility, dioxin could have been generated in the industrial processes used at BASF. While BASF supplied a list of known hazardous substances, the primitive description of the facility's phthalic anhydride, continuous ester, and batch ester processes do not provide adequate information to determine the extent of dioxin formation during these processes. A more complete characterization of the processes used would allow a comprehensive analysis of the intermediate products and possible by-products.

A specific 104(e) question to elicit this information is provided below:

#### <u>104(e) Request No. 8</u>:

- 8. Describe in detail the chemical processes used at the facility for all operations, including the palanil dyestuffs plant. For every process, include information regarding the following:
  - a. the equipment used in the process;

- b. the volume of each raw material used;
- c. the chemical composition of the raw material;
- d. the purity of the raw materials;
- e. the raw materials combined in each reaction;
- f. how long each reaction was allowed to run;
- g. the temperature of each reaction;
- h. the purity of the final product;
- i. characteristics of process wastes and waste water associated with each process, as well as the final disposition of process wastes and waste water; and
- j. a map of the facility indicating where each process occurred.
- 5. EPA should elicit more information about BASF's palanil dyestuffs production processes. BASF began operating a palanil dyestuff plant in or around 1973. Numerous studies have demonstrated the presence of dioxins in various types of dyes and pigments (Christmann et al., 1989; Heindl and Hutzinger, 1989; Remmers et al., 1992; Williams et al., 1992; EPA, 1994). Palanil is the commercial name for aromatic organic compounds used as dyes of polyester fibers. BASF used o-chloro-p-nitroaniline, a chemical that is structurally similar to dioxin precursors listed by EPA, in the palanil production process. See document attached at Tab 1. In addition, several chlorine containing compounds, including elemental chlorine and thionyl chloride are used in the production of palanil dyes. Id. Depending on the temperature, pH and catalytic conditions, dioxin could be formed from the reaction of some of the chemicals listed in Tab 1 with chlorine and chlorine containing compounds.

A specific 104(e) question to elicit this information is provided above, under issue number 4.

6. EPA should elicit more information about the status of the ECRA review conducted at the facility and any other investigations which have been performed at the facility.

Specific 104(e) questions to elicit this information are provided below:

#### 104(e) Request No. 9:

9. Provide all documents relating to the results of any investigations conducted at the property (whether mandated by federal, state or local agencies or conducted voluntarily by BASF), including, but not limited to, analytical results of ground water, surface water, ambient air, and soil or sediment sampling, sampling plans, and a description of any remedial actions taken by BASF as a result of the investigations.

#### 104(e) Request No. 10:

10. To the extent this information was not provided in response to question number nine, please provide information on the status of the ECRA review, including, but not limited to, analytical results of any sampling, sampling plans, and any remedial actions taken by BASF as a result of the investigation.

#### **Recommended Actions:**

- 1. EPA should send a second 104(e) request to BASF which elicits more information regarding:
  - a. BASF's relationship to United Cork and the processes utilized by United Cork to clean and remove lignin.
  - b. A detailed description of the way wastes were handled from 1966 to the present.
  - c. Detailed information regarding the operation of the incinerator.
  - d. Detailed information regarding the chemical processes used at the facility.
  - e. A description of investigations conducted at the facility including current information on the status of the ECRA review.
  - f. Detailed information regarding the palanil dye products produced by BASF, including the reactants, catalysts, and operating conditions used for each palanil dye product.

Attached to this memorandum is a complete list of draft 104(e) questions to submit to BASF.

2. EPA should notify BASF that it intends to pursue interviews of its current employees, and should pursue them. Maxus also recommends that EPA contact the following former employees:

 Robert Grimes
 201/332-2980

 Henry Hawes
 201/451-1402

 Joseph Kopchala
 908/968-3843

#### 104(e) REQUEST FOR INFORMATION

- 1. Describe in detail, by period of operation, all the ways that process waste water and storm water was disposed of or managed by BASF from 1966 to the present including, but not limited to:
  - a. when the waste water pre-treatment program was initiated by BASF;
  - b. how waste waters and potentially contaminated storm waters were managed by BASF prior to the initiation of the pre-treatment program;
  - c. the composition of waste waters from BASF's various operations;
  - d. when BASF received its permit for the storm water outfall;
  - e. where and how storm water was disposed of prior to the receipt of the permit for the outfall;
  - f. how potentially contaminated storm water was managed;
  - g. how waste water or potentially contaminated storm water was stored on the property;
  - h. which waste waters were incinerated; and
  - i. what combination of waste waters were incinerated.

Include in your response a flowchart detailing the generation and final disposition of all waste water produced by BASF from 1966 to the present.

2. Describe the use and operation of any incinerators at the property including, but not limited to, when the incinerator was constructed, the chemical composition of the materials incinerated, the volume of materials incinerated, how many years the incinerator was operated, and the feed rates of the incinerator. Provide in your response documents relating to the use or operation of the incinerator, including the results of any trial burns conducted on the incinerator and stack test sampling.

- 3. Please describe in detail which BASF process generated the process waste water that was incinerated, how often this process waste water was incinerated, and with what (if anything) the process waste water was combined before incineration.
- 4. Describe in detail the transaction between BASF and United Cork Company for the property at 50 Central Avenue, Kearny, New Jersey including, but not limited to, the nature of the transaction (merger, asset purchase., etc.), the year of the transaction, any agreements regarding the assumption or acquisition of liabilities, any guarantees, and any investigations performed by BASF regarding the property.
- 5. Describe the manufacturing processes of United Cork Company conducted on the property including, but not limited to, the equipment used in the processes, all raw materials used, the volume of raw materials used, and all substances produced or that were a by-product of operations of United Cork.
- 6. Describe the process used by United Cork to clean and remove lignin in the manufacture of cork products.
- 7. Describe in detail, how process waste waters, storm water and sanitary waters were disposed of or managed by United Cork Company at the property.
- 8. Describe in detail the chemical processes used at the facility for all operations including the palanil dyestuffs plant. For every process, include information regarding the following:
  - a. the equipment used in the process;
  - b. the volume of each raw material used;
  - c. the chemical composition of the raw material;
  - d. the purity of the raw materials;
  - e. the raw materials combined in each reaction;
  - f. how long each reaction was allowed to run;
  - g. the temperature of each reaction;
  - h. the purity of the final product;
  - i. characteristics of process wastes and waste water associated with each process, as well as the final disposition of process wastes and waste water; and
  - j. a map of the facility indicating where each process occurred.

- 9. Provide all documents relating to the results of any investigations conducted at the property (whether mandated by federal, state or local agencies or conducted voluntarily by BASF) including, but not limited to, analytical results of ground water, surface water, ambient air, and soil or sediment sampling, sampling plans, and a description of any remedial actions taken by BASF as a result of the investigations.
- 10. To the extent this information was not provided in response to question number nine, please provide information on the status of the ECRA review, including, but not limited to, analytical results of any sampling, sampling plans, and any remedial actions taken by BASF as a result of the investigation.

# BASF Corporation Documents and Comments Concerning CERCLA 104(e) Response

Submitted by

Maxus Energy Corporation

Responding on behalf of

Occidental Chemical Corporation

March 2, 1995

# INDEX OF DOCUMENTS IN SUPPORT OF COMMENTS REGARDING CERCLA 104(E) RESPONSE OF BASE CORPORATION

TAB 1	List of Raw Materials Consumed in Palanil Dyestuffs Plant
TAB 2	New Jersey Department of Environmental Protection (NJDEP) Hazardous Waste Generator Annual report - 1989 List of volumes of hazardous waste manifested
TAB 3	NJDEP Response to BASF's Sampling Plan - 1993  Comments on sampling plan including results from some samples
TAB 4	PVSC - Excerpt from 1973 Annual Report Description of violation by BASF
TAB 5	BASF Proposal Regarding Waste Water Treatment Plant Description of proposal to pretreat, rather than incinerate, waste water effluent
<b>TAB 6</b>	NJDEP - Notice of Final Denial of Hazardous Waste Incinerator Permit Application  List of findings regarding operation of incinerator and decision to deny permit

#### Table IV

The following is a list of chemical raw materials that il be consumed in the Palanil Dyestuffs Plant.

1, 5-Bis (2-Carboxyphenylamino)-anthraquinone N-Acetyl-p-phenylenediamine p-Aminoazobenzene N-cyanoethyl-N-(2-Acetoxy)-ethylaniline Aluminum Powder O-Chloro-p-nitroaniline Indanthrone m-Cresol 2. 4-Dinitro-6-bromoaniline 2. 6-Dibromo-p-nitroaniline -Ferrous Sulfate Manganese Dioxide 4-Hydroxy-1-methyl-quinoline-2 1-Amino-4-nitroanthraquinone-2-carboxylic acid 3-Hydroxyquinaldine-4-carboxylic acid Potassium Hydroxide 2-Phenoxy-1-amino-4-hydroxy-anthraquinone Sulfamic Acid Sodium Carbonate Sodium Cyanide Sodium Acetate Chloroform N-Butyl-N-cyanoethylaniline N-Cyanoethyl-N-ethylaniline Ethoxylated Oleic Acid Ethylene Glycol 3-Ethoxy-propylamine Nitrosylsulfuric acid p-Nitroaniline m-Nitroaniline Oleum 24% 2-Methoxy-5-acetylamino-N-cyanoethyl-N-hydroxyethylaniline Pyridine Sodium Nitrite Thionyl Chloride Ethylene glycol monoacetate Diethylene glycol monoethyl ether 3-Methoxy-propylamine N-Cyanoethyl-N-butyl aniline 1, 6-Hexanediol Nitrobenzene Chlorosulfonic Acid Bromine Sodium Hydroxide

#### Table IV (continued)

Methanol Sulfuric Acid, 96% Chlorine Phthalic Anhydride Hydrochloric Acid

#### NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROJECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 CERTIFICATION FORM

,	нем і	USEPA Identification NumberNJD046941530
Andrews	гтем 2	Generator (Company) Name: BASF CORPORATION · CHEMICAL DIVISION (BADISCHE CORP)
*****	ITEM 3	Contact Person: HABIB H. MICHAIL
-North	ITEM 4	Phone Number: 201-578-2349
(Mary)	ITEM 5	Certification:
	•	I certify that the information given in this annual report is true, accurate and complete.
named	HA	BIB H. MICHAIL HUNSTED 4/26/90
		(Print or type name) (Signature) (Date)
<del>.</del>	ITEM 6	A This site (company) generated less than 1.33 tons of hazardous waste for the calendar year 1989 (No Fee)
		B This site (company) generated greater than 1.33 tons of hazardous waste but less than 10 tons of hazardous waste during the calendar year 1989 (Fee \$200)
		This site (company) generated greater than 10 tons of hazardous but less than 100 tons of hazardous waste during the calendar year (Fee \$300)
		D This site (company) generated greater than 100 tons of hazardous waste during the calendar year (Fee \$400)
	ITEM 7	Federal Vendor Identification Number 161090809
	* Please s	submit check with your completed report.

#### NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 WASTESUMMARY FORM

desping	Generator (Company) Name BASE CORPORATION - CHEMICALS DIVISION
<b></b>	USEPAID Number NJD 0469 41530
<b></b>	<u>Directions</u>
<b>.</b>	Please indicate below the total quantity of hazardous waste manifested during the 1989 report year for each unit of measure. Enter the units of measure as they appeared in item #14 of the manifest. Do not convert one form of unit of measure to another.
	400 G - Gallons (liquids only)
,	2,804,112 P-Pounds
	T - Tons
	Y-Cubic Yards
	L - Liters (Liquids only)
	K-Kilograms

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WAS TE GENERATOR ANNUAL REPORT 1989 - REPORT FORM -

1	Conclutor Mame	BASE CORPORATION
2.	USEPA ID Number	NJD046941530
3.	Site Address	50 Central Avenue Kearny, New Jersey 07032
4.	Transporter Name	APPLIED TECHNOLOGIES
5.	Transporter USEPA ID	Number 450099287484
6.	TSD Facility Name	ENSCO SERVICES OF GEORGIA
7.	TSD Facility EPA ID No	unber GAD 000 2 2 2 0 8 3
8.		NEW SOUTH HARRIS STREET ON, CEORGIA 30720

9.	Waste	Waste	DOT Haz	Total	
	A.) Number	B.) Description	C) <u>Class</u>	D.) Quantity	E.) <u>Units</u>
	<b>(I)</b>	(11)	(!1 or J)	(13)	(14)
	K093, K094	HAZARDOUS WASTE SOLI E NOS ORM-E, NA 9189		46,440	P

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDI-), list the TOTAL quantity manifested for each waste type

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM-

1 Generator Name BASE CORPORATION

2 USEPA ID Number NJD046941530

3. Site Address 50 Central Avenue Kearny, New Jersey 07032

4. Transporter Name LIONETTI OIL RECOVERY, INC.

- 5. Transporter USEPA ID Number NJD084044064
- 6. TSD Facility Name . LIONETTI OIL RECOVERY, INC.
- 7. TSD Facility EPA ID Number NJD 084044064
- 8. TSD Address RUNYON & CHEESEQUAKE RDS.
  OLD BRIDGE NJ 08857

9.	Waste	Waste	DOT Haz	Total	
	A.) Number	B.) Description	C) Class	D.) Quantity	F.) <u>Units</u>
	(1)	(11)	(11 or J)	(13)	(14)
	X721,	WASTE OIL	T(toxic)	400	G
	x726	MOS COHBUSTIBLE			

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WAS TE GENERATOR ANNUAL REPORT 1989 - REPORT FORM:-

1	Generator Name	BAST CORI	PORATION		
2.	USEPA ID Number	NJD046941	530		
3.	Site Address	50 Centra Kearny, N	il Avenue New Jersey 07032		
4.	Transporter Name	CHEHICAL	WASTE MANAGE	EMENT, INC.	
5.	Transporter USEPA II	)Number I	LD09920268	1	
6.	TSD Facility Name	SCA MODE	EL CITY FACIL	ity	
7.	TSD Facility EPA ID N	umber NYD	049636679		
8.			1550 BALMER NY 14107	ROAD	
9.	Waste	Waste	DOT Haz	Total	
	A.) Number 8.)	<b>Description</b>	C.) <u>Class</u>	D.) Quantity	E.) <u>Units</u>

(11 or J)

NIA

(13)

6975

(11)

RQ WASTE HAZARDOUS

SUBSTANCE NOS-ORME, NA 9188

**(I)** 

N807

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

(14)

P

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM -

2	USEPA ID Number					
		8JD0:694153	0			
3.	Site Address	50 Central Kearny, New		07032		
4.	Transporter Name	WILLS TRU	•			•
5.	Transporter USEPA ID 1	Number OHD	0689	13409		
6.	TSD Facility Name 2	ENVIROSAFE	= SER	VICES	OF OHIO	
7.	TSD Facility EPA ID Nu	nber OHDO	4524	3706		
8.		OTTER CE	_			
9.	(I) C-385 RCRA HAZAR SOLID (HAZAR NJAC	Waste  Pescription (11)  NON-  LOUS WASTE  NOS. 9189  LOUS RE:  7.24-8.13	(1. C) <u>C</u>	T Haz lass l or J)	Total D.) <u>Ocentity</u> (13) <b>860</b>	E.) <u>Units</u> (14)

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

## NEW JURSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERA FOR ANNUAL REPORT 1989 - REPORT FORM -

!	Generator Name	BASE CORPORATION

2 USEPA ID Number

NJD046941530

3. Site Address

50 Central Avenue

Kearny, New Jersey 07032

4. Transporter Name

NAPPI TRUCKING CORPORATION

5. Transporter USEPA ID Number NJD000 813 477

6. TSD Facility Name MICHIGAN DISPOSAL

7. TSD Facility EPA ID Number MID000724831

8. TSD Address 4935 NORTH 194 SERVICE DR. BELLEVILLE, MI 48111

9.	Waste	Waste	DOT Haz	Total	
	A.) <u>Number</u>	B.) Description	C) <u>Class</u>	D.) Quartity	E.) Units
	(1)	(11)	(11 or J)	(13)	(14)
C385		RCRA NON-HAZARDOUS WASIE SOLID NOS 9189 (HAZARDOUS RE: NJAC 7.76-8.13 C-385)	NJA	1,128,320	P

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTA!, quantity manifested for each waste type

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM-

1.	Concrator Name BAST CORPORATION						
2.	USEPA ID Number	NJD046941\$30					
3.	Site Address	50 Central Avenue Kearny, New Jersey	, 07032	·			
4.	Transporter Name	PRICE TRUCKING	•				
5.	Transporter USEPA ID	Number NYD 016	165574				
6.	TSD Facility Name	CHEMICAL WASTE	HANAGEM	ENT, INC.			
7.	TSD Facility EPA ID No	umber 1LD 09920	2681				
8.		ABAMA HIGHWAY ELLE, ALABAMA			R 163		
9.	Waste	Waste DC	T Haz	Total			
	A.) Number B.)	Description C.) C	<u>lass</u>	).) Quantity	E.) <u>Units</u>		

(11)

HAZARDOUS WASTE

NA 9189

SOUD - NOS DEM-E

(1)

4190

(11 or J)

N/A

(13)

576

(14)

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROJECTION TRAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM -

1	Cenerator Name	BASE CORPO	RATION			
2	USEPA ID Number	NJD0469415	30			
3.	Site Address	50 Central Kearny, Ne		07032		
4.	Transporter Name	WILLS TR	•		•	
5.	Transporter USEPA ID	Number OH	06891	3409		
6.	TSD Facility Name	CHEMICAL	WASTE	MANAGE	THENT INC	•
7.	TSD Facility EPA ID N	umber ALD	00062	2464		
8.	TSD Address ALA &	BAMA HIGH U LE, ALABAM	•		EMARKER	163
9.	Waste	Waste		Haz	Total	
	<del></del>	<u>Description</u>	C) <u>Cl</u> a		D.) Quantity	E.) <u>Units</u>
	(1)	(11)	(11	or J)	(13)	(14)

NIA

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifesied for each waste type

RO, HAZARDOUS WASTE SOLID, NOS ORM-E NA 9189 (BIS(2-ETHYL

HERY W PHTHALATE

T8/235

U028

420,940 P

## NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROJECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM -

		1	Generator Mair	or BASE COR	PORATION			
		2.	USEPA ID Num	lka NJD04694	1530			
Aleman .		3.	Site Address	· ·	al Avenue New Jersey	07032		
		4.	Transporter Na	•	S TRUCK		ING INC.	
		5.	Transporter USI	EPA ID Number /	LD0992	0268	1	•
		6.	TSD Facility Na	me CHEMICAL	WASTE	MANA	GEMENT, 11	10.
		7.	TSD Facility EP	AID Number AL	000062	22464	1	
<b>K</b> -on		8.	TSD Address	ALABAMA HIGH EMELLE, AL	IWAY 17 -ABAMA	е ні З!	LE MARKER 5459	163
		9.	Waste A.) <u>Number</u> (I)	Waste B.) <u>Description</u> (11)	C) <u>C1</u>	ΓHaz ass or J)	Total D.) <u>Ocantity</u> (13)	2.) <u>Units</u> (14)
****			× 4190	HAZARDOUS WA SOLID - NOS OR NA 9189	•	<b>4/</b> A	8637	P
<b>-</b>	(A	,	U028	RQ, HAZARDOUS SOLID, NOS ORI NA 9189 (BIS(ZI HEXYL) PHTHALATI T81235	4-E Ethyl	N/A	570, 240	Р

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

## THE WIFERSTY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989 - REPORT FORM -

1	Commutation 84.	une BASE COR	PORATION		
2	USEPA ID NO	imber NJD04694	1530		
3.	Site Address		al Avenue New Jersey 0703		
. 4.	Transporter N	dans.	•	· Vagement , inc	<u>:</u> .
5.	Transporter U	ISEPA ID Number I	LD 099 2026	81	
6.	TSD Facility N	vame CHEMICAL	WASTE HANAG	SEHENT, INC.	•
7:	TSD Facility E	PAID Number ALI	00062246	4	
8.	TSD Address	ALABAMA HIGH EMELLE, ALAL			163
9.	Waste A.) <u>Number</u> (1)	Waste 8.) <u>Description</u> (11)	DOT Haz C) <u>Class</u> (11 or J)	Total D.) <u>Quantity</u> (13)	E.) <u>Units</u> (14)
	u190	HAZALDOUS WASTI SOLIP, NOS DRM NA 9189	· <i>y</i>	14,010	P
	Door	RQ WASTE SODIUM NITRUE QXIDIZER UNISOO	• • •	5,527	Р
	4069. 4028	HAZARDOUS WAST SOLID NOS ORM NA 9189		3562	Р
NO.	UOZB	RQ, HAZARDOUS W SOLID NOS GRM NASIRG (BUS (2ET HEXYLI PHTHALATE) I combination of transp	ie - hyl T81235	552, 540	P ∴
NO1	TE: For eacl	HASIRG (BIS (ZET HEXYLI PHTHAGATE)	нуц Тв1235	, storage and	م.

disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

DRAFT

U.S. ENVIRONMENTAL PROTECTION AGENCY

SITE NAME BASE CORPORATION  50 CENTRAL AVENUE  KEARNY NT 07032	8-25-89 1989 Waste Minimization Report					
EPAID NO W.J.D.O.4,69,4,1,5,3,0	FORM IDENTIFICATION AND CERTIFICATION					
INSTRUCTIONS: Feed the detailed Instructions beginning on page 6 of the	1989 Hazardous Waste Report booklet before completing this form					
SEC. I Site name and location address. Complete items Althrough H. Check the different, enter corrections. If label is absent, enter information, instruction						
A EPA D No.  Same as label or W.J.D.D.4.6.9.4.1.5.3.D. Same as la  C. Has the alle name associated with the EPA Dicharged since 18877 0 1 Yea  EV 2 No.	BASE CORP CHEMICALS DIV.					
D. Street name and number. I not applicable, snow industrial part, building name of other physical location de Same as label 0 50 CENTRAL AVENUE	orprion.					
Same as land   KEARNY HUDSON	Same as label   Same as label   Same as label					
SEC. II Mailing address of site. Instruction page 6.						
A. In the meding address the same as the location address?    I Yes (SOP TO SEC. II)	1					
3. Number and street name of malling address						
C City, town, village, etc.	E Zo Codo					
SEC. III Name, title, and telephone number of the person who should be contacted	if questions arise regarding this report. Instruction page 6.					
MIAUAU UNBIR U I	GER, (2,0,1), (5,7,8), (2,3,4,9)					
SEC. N  Enter the Standard Industrial Classification (SIC) Code that describes the parties rendered at the site's physical location. Enter more than one Sactivities of the site. Instruction page 7.						
2,8,69, 1,1/1/	(M1/1V) c (M1/1V)					
SEC. V documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am swere that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.						
Form C ( 1 12 ) Form WM (						
MICHAIL HABIB	H. MGR - SAFETY / ECOLOGY					
" VKY OI-IN UN	Page 1 of					
PA Form Revised	OVER ->					

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER.

#### **ATTACHMENT 3**

3. Included with this section are copies of reports that describe enforcement actions, excursions and compliance evaluations for BASF's Kearny facility. This enforcement provides a historical account of notifications to BASF from the NJDEP and the subsequent outcomes of each incident or decision. A summary of each specification is provided in the accompanying summary sheets. The information provided within this section has been compiled through a diligent review of plant records, corporate files, legal review and NJDEP Central Files.

#### BASF CORPORATION Kearny, New Jersey

3.	Summary of Enforcement A Regulations:	action for Violation of Enironmental Laws or
	Date of Action	1-20-81
	Section of Law or Statute viola	ated <u>CWA</u>
	Type of Enforcement Action	written report detailing action to correct noted violation
	Description of the Violation	TOC exceeded permit limitation
	How was the violation resolved	d? <u>- violation remedied</u>

#### BASF CORPORATION Kearny, New Jersey

3. * Summary of Enforcement Regulations:	nt Action for	Violation of	Environmental	Laws or
Date of Action	10-28-	82		
Section of Law or Statute	violated		CWA	
Type of Enforcement Action	on <u>wr</u>	itten report de noted violat	etailing action to ion	согтест
Description of the Violation	on <u>TOC</u> a	and petroleum	hydrocarbons e	xceeded
permit lin	mitation			
	·			
How was the violation reso	olved? <u>violatio</u>	on remedied	_	
·				

## BASF CORPORATION Kearny, New Jersey

3.	**Summary of Enforcement Action Regulations:	n for Violation of Environmental Laws or		
	Date of Action	4-14-88		
	Section of Law or Statute violated	WPCAR		
	Type of Enforcement Action	written report concerning spec details of remedial measures and implementation timetable		
	Description of the Violation	permitted parameters exceeded established		
	How was the violation resolved?	violation remedied		

### BASF CORPORATION Kearny, New Jersey

3. F*	Summary of Enforcement Action for Violation of Environmental Laws or Regulations:
	Date of Action 7-19-88
	Section of Law or Statute violatedSOAR
	Type of Enforcement Action 60 days to comply with SOAR
	Description of the Violation non-compliance with sludge quality assurance
	regulations
	How was the violation resolved? violation remedied

#### BASF CORPORATION Kearny, New Jersey

3. f Summary of Enforcement A Regulations:	Action for	Violation	of Environmer	ntal Laws or
Date of Action	10-21	-88		
Section of Law or Statute viol	lated	<del></del>	WPCA	
Type of Enforcement Action	measure		ning spec details tuted, implemen	
Description of the Violation	1) SPCC P	lan due for	revision, existing	SPCC Plan
not certified by P.E.; 2) no DI	PCC/DCR	Plan is requ	ired: and 3) pro	duct spiilage
at railroad tra	ack			
How was the violation resolve	ed? <u>viola</u>	tion remedi	ed	

	3. f <sup>3</sup>	Summary of Enforcement Regulations:	Action for	Violation o	f Environmental	Laws or
		Date of Action	4-24-	89		•
		Section of Law or Statute vio	olated	NJWPCA, F	FCWA	
		Type of Enforcement Action	٠ .	fine		
		Description of the Violation  System Permit and no			_	mination
		How was the violation resolv	ved? <u>violat</u>	ion remedied		
,						

3. **	Summary of Enforcement Action for Violation of Environmental Laws or Regulations:
	Date of Action 11-13-89
	Section of Law or Statute violated NJAC
	Type of Enforcement Action fine
	Description of the Violation <u>failure to supply reports regarding leaking</u> <u>components</u>
	How was the violation resolved? payment of fine

3. f *	Summary of Enforcement Action for Regulations:	or Violation of Environmental Laws or
	Date of Action 4-	-21-89
	Section of Law or Statute violated	NJAC NJAC
	Type of Enforcement Action	fine
	Description of the Violation <u>inciner</u> for particulates, SOx, and hy	rator emission rates greater than allowable
	How was the violation resolved?	payment of fine

3. t 2.	Summary of Enforcement Regulations:	Action for	Violation o	f Environmental	Laws or
	Date of Action	4-21	-89		
	Section of Law or Statute vi	olated	NJAC		
	Type of Enforcement Action	n _	fine		
	Description of the Violation  for particulates, S			ates greater than	allowable
	How was the violation resolu	ved?	payment (	of fine	

3. **.	Summary of Enforcement Action for Violation of Environmental Laws or Regulations:
	Date of Action 9-14-88
	Section of Law or Statute violated NJSA
	Type of Enforcement Action
	Description of the Violation operation of equipment (reactor with scrubber)  with expired certificates
	How was the violation resolved? payment of fine

3. **	Summary of Enforcem Regulations:	nent Action	for Viol	ation of	Environmental	Laws or
	Date of Action		6-21-90		•	
	Section of Law or Status	te violated	<del></del>	NJSA		
	Type of Enforcement A	ction		fine		
	Description of the Viola  March 1, 1989 a rep				•	•
	How was the violation r	esolved?	p	ayment of	fine	

3. <sup>f *.</sup>	Summary of Enforcement Actio Regulations:	n for	Violation o	of Environmenta	l Laws	or
	Date of Action	2-2-	90		· · · · · · · · · · · · · · · · · · ·	<u></u>
	Section of Law or Statute violated		NJAC			
	Type of Enforcement Action		fine			
	Description of the Violation <u>failur</u> <u>Program Statement</u>	e to su	ıbmit summaı	ry Risk Managem	ient	
	How was the violation resolved?	requ	est for hearin	g. Risk Managen	ient	
	Program submittal					<u></u>

3. **	Summary of Enforcement Regulations:	Action for	Violation of	Environmental	Laws or
	Date of Action	9-14	-88		<del></del>
	Section of Law or Statute vio	lated	NJSA		
	Type of Enforcement Action	-	fine		
	Description of the Violation  with expired c	-	of equipment (	reactor with scr	ubber)
			<del> </del>		
	How was the violation resolve	ed?	payment of	fine	

3. **·	Summary of Enforcement Regulations:	Action for	Violation	of Environmen	ntal Laws	or
	Date of Action	6-21	-90			
	Section of Law or Statute vio	olated	NJS	Α		
	Type of Enforcement Action	-	fine			
	Description of the Violation  March 1, 1989 a report o				•	
	How was the violation resolv	ed?	paymen	t of fine		
-						

3.	Summary of Enforcement Action for Violation of Environmental Laws or Regulations:
	Date of Action 6-20-90
	Section of Law or Statute violated NJAC
	Type of Enforcement Action cease operation of equipment listed or obtain certification of operation by 8-1-90 and pay fine
	Description of the Violation operation of equipment with expired certificate  (reactor with scrubber)
	17646107 ************************************
	How was the violation resolved? request for hearing. Risk Management  Program submittal



## State of New Jersey Department of Environmental Protection and Energy

Division of Responsible Party Site Remediation CN 028 Trenton, NJ 08625-0028

Scott A. Weiner Commissioner

Karl J. Delaney Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

APR 21 1993

Dale E. Webster
BASF Corporation
8 Campus Drive
Parsippany, New Jersey 07054

Re: BASF Corporation

Kearny Town, Hudson County

ECRA Case # 90537

Phase I Sampling Plan Report/ Phase II Sampling Plan

Response to Draft Sampling Plan Approval (DSPA)

Dear Mr. Webster:

The New Jersey Department of Environmental Protection and Energy (NJDEPE) has completed its review of the Sampling Plan referenced above which was proposed by BASF on behalf of BASF. Please be advised, NJDEPE cannot approve the Sampling Plan as proposed. NJDEPE can, however, approve the Sampling Plan provided BASF accepts and incorporates all of the conditions articulated below into its Sampling Plan. If BASF accepts these conditions, this letter shall serve as the Sampling Plan Approval letter and, within 90 calendar days from receipt of this letter, BASF shall submit to NJDEPE the sampling results of this approved Sampling Plan along with a further proposal pursuant to N.J.A.C. 7:268-4.3.

In the alternative, if BASF does not accept and incorporate all of the conditions articulated below as part of its Sampling Plan, BASF shall, within 45 calendar days of receipt of this letter, submit a revised Sampling Plan to NJDEPE. This revised Sampling Plan shall incorporate all of the conditions set forth below in order to address the deficiencies in the above referenced Sampling Plan. BASF shall submit the revised Sampling Plan with the appropriate review fees pursuant to N.J.A.C. 7:26B-1.10.

BASF shall contact the Case Manager, John Graham, in writing no later than 15 calendar days upon receipt of this letter indicating whether BASF accepts the conditions set forth below as part of its Sampling Plan, or whether BASF shall submit a revised Sampling Plan, addressing all of the deficiencies in the above referenced Sampling Plan.

If NJDEPE does not receive a written response from BASF within this time frame, NJDEPE considers the above referenced Sampling Plan disapproved and hereby requires BASF to submit a revised Sampling Plan within 45 calendar days of receipt of this letter. If NJDEPE is not in receipt of a revised Sampling Plan that addresses all of the deficiencies in the above referenced Sampling Plan within 45 calendar days of receipt of this letter, this matter will be immediately referred to the Bureau of Applicability and Compliance ("BAC") for

review and possible initiation of enforcement action. Such enforcement action may include, but is not limited to, the assessment of penalties pursuant to the N.J.A.C. 7:26B-9.

The following conditions are the minimum requirements that shall be incorporated by BASF in order to obtain Sampling Plan Approval. Should BASF or any representatives of BASF have any questions concerning this matter and/or the conditions referenced herein, please do not hesitate to contact the case manager.

The NJDEPE's most recent general guidance on contaminant cleanup levels can be found in the "Cleanup Standards for Contaminated Sites" which appeared in the February 3, 1992 New Jersey Register and the attached "Soil Cleanup Criteria". This rule proposal and soil cleanup criteria can be used as guidance to help you determine: what concentration of contaminants need to be present at a site to consider the site contaminated; which areas of environmental concern need additional investigation; and, the concentration of a contaminant allowed to remain for a site to be considered "clean". It must be remembered, however, that the actual cleanup goal at a particular site is determined by the NJDEPE on a case-by-case basis and may be different than that in the above referenced rule proposal. This variation may be due to many factors, including, site specific human health and environmental exposure pathways, the presence of site contaminants not addressed in the rule proposal, and site specific physical characteristics. In case specific situations, when a cleanup level is modified from one previously established for that specific site, the NJDEPE , will make every effort to expeditiously notify the responsible party. Please consult your case manager to discuss any modifications which may impact your remedial actions.

If the person conducting a cleanup does not wish to remediate a contaminated site consistent with the guidance, they shall submit a proposal to their NJDEPE case manager that details the site specific circumstances and technical rationale for cleanup goals on a case-by-case basis.

Please note that the referenced guidance has been supplemented by the adoption of the Ground Water Quality Standards (N.J.A.C. 7:9-6) which appeared in the February 1, 1993 New Jersey Register. This rule adoption may impact requirements for ground water remediation and soil cleanup (i.e. where the soil may contribute contaminants to the ground water above the applicable standards) for a particular site and should be referenced and discussed with your case manager.

The proposed "Technical Requirements for Site Remediation" rules appeared in the May 4, 1992 New Jersey Register. These proposed rules provide guidance concerning the environmental investigation and remediation at contaminated sites or sites at which contamination is suspected. Prior to promulgation, these proposed rules will be used as the Department's primary guidance document, replacing the Division of Responsible Party Site Remediation's Remedial Investigation Guide, the ECRA Cleanup Plan Guide, the Bureau of Underground Storage Tanks'(BUST) Scope of Work document (and appendices) and the parts of BUST Technical Guidance Document.

It should be noted that technical requirements are included in subchapters 7, 8 and 9 of the Regulations Implementing the New Jersey Underground Storage of Hazardous Substances Act (N.J.A.C. 7:14B-1-13 and 15). If the person responsible for conducting an environmental investigation/remediation chooses to apply the proposed rules to their site, all applicable guidance appearing

in the proposed rule should be followed to accomplish the investigation. This will allow for consistent evaluation of any discharges and potential impacts.

#### I SOIL CONDITIONS

#### A. GENERAL COMMENTS

- 1. The compound Bis (2-ethylhexyl) phthalate is present in various samples at elevated levels, for example AOC 12. The compound is also being delineated by means of test pits. Yet, the bis-phthalate has not been tabulated separately in the tables of data or on the "concentration maps ". This information is required and would greatly facilitate the review of further proposals, including test pit proposals. In response to the DSPA BASF proposed to provide this documentation in the Phase II Sampling Plan Report. This is acceptable.
- 2. For each area of concern shall indicate the specific results for the grid sample point on the site plan where the grid sample point is to be used for delineation. In response to the DSPA, BASF proposed to provide this documentation in the Phase II Sampling Plan Report. This is acceptable.

#### B. AREAS PENDING RE-EVALUATION OF HISTORICAL SAMPLING RESULTS

The historical sampling results for all AOCs should be evaluated by BASF and compared to the soil cleanup criteria referenced above. In areas where chromium (Cr) is a parameter of concern hexavalent shall not exceed 10 ppm and total Cr shall not exceed 500 ppm. The review shall include a comparison of historical results related to all three categories of the soil cleanup criteria (including the most stringent cleanup criteria) for individual compounds throughout the soil column. BASF shall determine whether remedial efforts in each AOC will be designed to achieve Residential or Non-Residential Direct Contact Soil Cleanup Criteria and Impact to Ground Water Cleanup Criteria. Additional remediation of some AOCs may be required for compliance with the site's targeted cleanup levels.

Included in the data review should be an evaluation of the minimum detection limits (MDL), tentatively identified compounds (TICS) and individual contaminants (i.e. petroleum hydrocarbons (PHCs), metal, base neutrals (BNs), VOs, etc.) throughout the soil column. It is advised that based on this re-evaluation additional investigation and/or remediation in areas previously addressed may be required.

If BASF intends to leave residual levels throughout the soil column that do not meet the residential direct contact soil cleanup criteria and/or the most stringent cleanup criteria, then a proposal to use institutional controls (i.e. Deed Restriction, paving, etc.) shall be submitted. The use of residential or non-residential direct contact soil cleanup levels directly effects whether a Deed Restriction is required when a cessation of operations occurs. For example, when a cessation occurs and remediation is proposed to meet the non-residential direct contact cleanup criteria and the less stringent cleanup criteria, then a Deed Restriction is required. Alternately, if a cessation occurs and remediation is proposed to meet the most stringent cleanup criteria throughout the soil column, then a Deed Restriction is not required.

#### C. AREAS PREVIOUSLY APPROVED

1. The following areas received RCRA closure plan approvals: AOC 14 (RCRA Hazardous Waste Incinerator and AOC 22 (RCRA Drum Storage Pad). Please be advised that the Department is in the process of coordinating efforts between programs for an efficient use of resources. BASF shall report the status of these AOCs in the next ECRA submittal. Please be advised that the attached cleanup criteria and the "Cleanup Standards for Contaminated Sites" are applicable to these areas.

#### 2. AOC 19, 24

These AOCs, 19 (Former Dyestuff Plant) and 24 (transformer next to maintenance shop) were previously addressed as RCRA units. However, upon further review of these AOCs they do not appear to be RCRA units. BASF shall submit the status of these AOCs in the next submittal along with the appropriate proposals based on review of any sampling results.

#### 3. Underground Storage Tank Closure

#### a. Tank C1 - 500 gallon - Gasoline

Three post-excavation samples were taken and analyzed for TPH, lead, and BTEX. Two sidewall samples and one sample from the excavation bottom were taken. Two sidewall samples were provided due to the orientation of the tank and construction in the area. As noted above, all previous results for all areas will need to be re-evaluated before no further action can be approved.

#### b. Tank E1 - 1000 gallon - Gasoline

Six post-excavation samples were collected, two from the bottom of the excavation and four from the sidewalls. Samples were analyzed for TPH, lead and BTEX. As noted above, all previous results for all areas will need to be re-evaluated before no further action can be approved.

#### D. AREAS APPROVED WITH CONDITIONS

#### AREAS OF ENVIRONMENTAL CONCERN

As noted above, all AOCs will need to be evaluated with the guidance provided in this letter. Please refer to each AOC for comments.

#### 1. AOC 5, 9, 10, 15, 16, 17, 18, 21, 23.

The following AOC's were discussed in the Sampling Plan, but no proposals for the next phase were presented: AOC 5, 9, 10, 15, 16, 17, 18, 21, 23. Proposals for the next phase were requested for AOCs 5, 9, 10, 15, 16, 17, 18, 21 and 23 during the draft comment period. No proposals were submitted. BASF feels that a site-wide contamination problem has been identified and the horizontal extent of contamination has been delineated.

In response to the DSPA BASF proposed to submit alternate cleanup levels to be used to evaluate the contamination found on site. Due to the extent of contamination and the apparent random distribution, BASF believes that full delineation of each area of environmental concern is unnecessary. This proposal is unacceptable.

ECRA 90537

Alternate cleanup standards based on future site use are unacceptable. Contaminant levels found on site shall be compared to the attached cleanup criteria and the "Cleanup Standards for Contaminated Sixes". BASF shall conduct full horizontal and vertical delineation of each AOC. See item 26 for additional comments.

#### 2. AOC 1 - Buildings 19, 28, and 28A

2 AGST - Diesel Fuel
1000 Gallon UGST - Gasoline
Visible surface stains - west of RR spur

This AOC includes 2 ASTs - diesel fuel, 1000 gallon UST - gasoline and visible surface stains west of the RR spur. Five soil samples were collected two at 0-6" below grade, analyzed for TPHC and BN+15, two at 6-12" below grade, analyzed for TPHC and VO+15 and one at 0-6" above the water table, analyzed for TPHC and BN+15.

BASF agrees to collect a sample at 18-24" to be analyzed for VO+15 in the area of visible staining. In response to the DSPA BASF also proposed two borings to the N and S of the tracks to delineate the probable source of contamination. Samples will be collected at 0-6" above the water table. This proposal is conditionally acceptable.

- a. Individual BN compounds found in samples in this area shall be compared to the attached cleanup criteria and the "Cleanup Standards for Contaminated Sites".
- b. In addition to the samples proposed N and W of SBIAEC1, samples are required to the E and W of soil boring SBIAEC1. Sample depth shall be 0-6" above the water table. Sample parameters for all four samples shall be TPHC, BN+15 and VO-15.
- c. Samples shall be collected in the area of the 1000 gallon gasoline UST. Four soil borings or test pits shall be installed within two feet of the tank with one soil sample located at each end, and additional sampling locations located along the length of the tank system. Sample depths shall be in accordance with the proposed Technical Requirements. Sample parameters shall be TPHC and VO+15.
- d. Samples were previously required to be collected in the area of test pit 46 which is actually located in AOC-24. These samples are still required.

#### Rationale:

BASF shall determine whether the source of contamination is related to the loading areas along the railroad spur or to overspills or leaking of the No. 2 Fuel Oil AGT. It should be noted that a grid soil sample was not taken in the area adjacent to the fuel oil tank and that a test pit is proposed next to the tank. Another source of this problem could be located near test pit 46 in AOC-24 which displayed a sheen. It is unclear why BASF chose test pits in these areas when there has been no soil sampling or groundwater data submitted from either the fuel oil tank area or from AOC-24 other than from the transformer pad area.

It should also be noted that prior to the case going ECRA, a representative from the facility complained that the fuel oil delivery truck driver was

overfilling the fuel oil tank. Visible staining in this area may be difficult to detect as most of the unpaved areas at the site are covered with crushed stone. This was not addressed under NJPDES since BASF indicated that they were planning to close the site, thus triggering ECRA.

#### 3. AOC 2 - Tank Farm Area

This Tank farm area is within a concrete pad and dike, no sampling was completed here. The area outside the tank farm was used for soils staging for soils excavated from area 1. BASF indicates that samples were taken in the area and that the soils pile was found to contain phthalate esters, so the RR spur area was backfilled with clean fill. Soils were excavated to the water table four feet out from either side of the railroad spur due to the presence of bis(2-ethylhexyl)phthalate. No post-excavation samples were collected.

The proposal by BASF to address the excavated soils from this excavation as part of the soil remediation program is conditionally acceptable.

- a. Unless excavation was completed to a previously delineated clean zone post-excavation sidewall samples are required. Sample depths shall be 0-6" below grade and 0-6" above ground water. Sample parameters shall be BNs. BASF was to indicate the fate of the soil pile and discuss any post-excavation sampling.
- b. The proposal by BASF to address soils as part of the Remedial Action Work Plan acceptable.

#### 4. AOC 3 - Former Organic waste Incinerator and Dowtherm Boiler Area

Two samples were collected at 0-6" below grade adjacent to the boiler pad. Samples were analyzed for TPHC, BN+15 and PCBs. Some CaPAH's and PHC's were found. PCB's were non-detect. Sample AEC3-ADD2 contained 15.17ppm CaPAH. BASF has proposed to take a soil sample if, after decommissioning, it is determined that underlying soils may be impacted. BASF will visually inspect and photo document the integrity of the boiler pad to determine if sampling of the underlying soils is required. If sampling is deemed necessary, one sample will be taken from the 0 to 6" below grade interval and adjacent to the stained areas. An additional sample will be taken from 0 to 6" above the water table if needed. Sampling parameters will include BNA +25. This proposal is conditionally acceptable.

a. The individual CaPAHs found in sample AEC3-ADD1 shall be compared to the attached cleanup criteria and the "Cleanup Standards for Contaminated Sites" to determine if there is a need for remediation in this area.

#### 5. AOC 4 - Building 1A - Maintenance Stores Waste Oil Storage Tank

The waste oil tank is staged on a concrete pad. A chip sample was collected from the pad and analyzed for PHCs, BN+15 and PCB. The sample was ND for PCBs and CaPAHs. BASF proposes to visually inspect and photo document the integrity of the pad. If the integrity is breached a sample will be collected and analyzed for PP+40. VO+15 shall be collected at 18-24" below grade. This proposal is conditionally acceptable.

a. If there is potential for runoff from the pad, samples shall be collected alongside of the pad. Sample depths shall be 0-6" below grade. Sample parameters shall be TPHC and PP+40.

b. If pad is not intact, samples shall be analyzed for TPHC in addition to PP+40.

#### 6. AOC 5 - Compactor Area

Refuse and debris were disposed in this area. Two soil samples were collected at one location. One sample was collected at 0-6" below grade and analyzed for TPHC and BN+15 and one sample was collected at 18-24" and analyzed for VO+15. TPHC concentration was 10,000ppm, total BN concentration was 3675ppm, total CaPAH was 5.66ppm and total VO was .003ppm.

BASF proposes to use post-excavation sampling to confirm that remediation is complete and not to delineate individual sources. BASF contends that the source of the contamination is obvious and staining is known to be associated with the compactor so no further delineation sampling is proposed. BASF also states that the at-depth sample indicates no significant contamination. This proposal is conditionally acceptable.

- a. Concentrations of the individual CaPAH and BN contaminants found in the sample shall be compared to the attached cleanup criteria and "Cleanup Standards for Contaminated Sites".
- b. The at-depth sample was analyzed only for VOs. It does not indicate whether other types of contaminants are present at this depth or below. If remediation is not to be conducted on the other three sides of the compactor pad, samples shall be collected on each of the three sides. Sample depths shall be 0-6" below grade. Sample parameters shall be TPHC and BN+15.

#### 7. AOC 6 - Buildings 23 and 23A - Boiler House Area and Basacryl Sump Pit

The basacryl sump pit collects wastewater from the batch ester plant and continuous ester plant sumps prior to discharge into the waste water treatment tanks. After decommissioning it was noted that the concrete bottom was not intact.

With pipe inverts at approximately 4.5 feet and ground water fluctuating between 3 and 6 feet, BASF believes that soils may be impacted and so proposes to collect ground water samples. This proposal is conditionally acceptable.

a. In addition to ground water sampling soil samples shall be collected at 0-6" above the saturated zone. Sampling parameters will include PHC and BNA +25.

#### 8. AOC 7 - Electrical Substation Area

This area includes four transformers and a pad. Four chip samples and one soil sample were collected and analyzed for PCB and PHC. Elevated PCB's were found in the soil sample. PHC's were also present.

BASF has proposed to collect three subsurface soil samples from 0 to 6" above the water table. Analytical parameters will include PCB and TPH. Samples will delineate the contamination noted at AEC7 - ADD1. One sample will be taken in the area of AEC7-ADD1.

However, horizontal delineation of the PCB does not seem to be complete in this area. PCB was not included as an analytical parameter in the grid sampling, and PCB may not have migrated down to the water table.

BASF has agreed to provide a minimum of two additional samples to the east and south of the location AEC7-ADD1 in addition to the proposed samples. These samples shall be taken at 0 to 6" below grade and analyzed for PHC and PCB.

#### 9. AOC 8 - Batch Ester Tank farm Area

One soil sample was collected in a stained area and analyzed for B/N and TPH. BASF has proposed to collect a soil sample, if after decommissioning it is determined that underlying soils may be impacted. BASF proposed to visually inspect and photo document the integrity of the tank farm area. If sampling is deemed necessary, one sample will be taken from the 0 to 6" below grade interval and adjacent to the stained areas. An additional sample will be taken from 0 to 6" above the water table if needed. Sampling parameters will include TPH and BNA +25. This proposal is acceptable.

#### 10. AOC 9 - Batch Ester Plant ( BEP ) Area

This plant produces phthalate ester plasticizers. The area is paved and staining is present. Three samples were collected at one location. Samples were analyzed for TPHC, BN+15, VO+15 and AE. The sample collected at 0-6" below grade contained 22700ppm TPHC and 94.64ppm BNs; CaPAHs were non detect. No VOs were detected in the sample collected at 18-24" below grade. The sample collected at 0-6" above the water table contained 7130ppm TPHC, 33.16ppm BNs and .33ppm CaPAH.

BASF proposes to submit a remediation strategy with the Phase II report. Post-excavation samples will be collected to ensure that cleanup is complete. No further delineation sampling is proposed. This proposal is acceptable.

#### 11. AOC 10 - Electrical Substation Area (Transformers 1, 2, 3, and 4)

Four chip samples were collected from the concrete pad and analyzed for TPHC and PCBs. TPHC ranged from 170 to 663ppm; PCBs ranged from .12 to .76ppm. BASF proposed to address this area in the remedial action work plan to be developed following the implementation of the Phase II Program. This proposal is conditionally acceptable.

a. Soil samples are required to be collected north and east of the pad. Sample depth shall be 0-6" below grade. Sample parameters shall be TPHC and PCBs.

#### 12. AOC 11 - Maintenance Shop Area

Sampling was not conducted in this area. BASF has proposed to collect a soil sample, if after decommissioning it is determined that underlying soils may be impacted. BASF proposed to visually inspect and photo document the integrity of the pavement. If sampling is deemed necessary, one sample will be taken from the 0 to 6" below grade interval and adjacent to the stained areas. An additional sample will be taken from 0 to 6" above the water table if needed. Sampling parameters will include TPH and BNA +25. This proposal is acceptable.

#### 13. AOC 12 - Continuous Ester Plant Area

This plant produced bis (2 ethylhexyl) phthalate. The plant area is paved and staining was observed. Two samples were collected from stained areas. One chip sample was analyzed for PCB and TPH. The second, surface soil sample was

analyzed for TPH and B/N+15. The soil sample contained 1360ppm TPHC and 378.88ppm BNs. BN's were mostly phthalate esters.

BASF has proposed to collect a soil sample, if after decommissioning it is determined that underlying soils may be impacted. BASF proposes to visually inspect and photo document the integrity of the paved area. If sampling is deemed necessary, one sample will be taken from the 0 to 6" below grade interval and adjacent to the stained areas. An additional sample will be taken from 0 to 6" above the water table if needed. Sampling parameters will include TPH and BNA +25. This proposal is conditionally acceptable.

a. BASF states that further sampling will be provided in the event that there is evidence of a discharge when the area is decommissioned. However, the soil sample contains elevated bis-phthalate. BASF shall provide, at a minimum, vertical delineation in this area.

#### 14. AOC 13 - Phthalate Acid Anhydride Plant Area

Transformers are present in the area and staining is evident on the paved areas. BASF has proposed to take a soil sample, if after decommissioning it is determined that underlying soils may be impacted. BASF proposes to visually inspect and photo document the integrity of the pavement. If sampling is deemed necessary, one sample will be taken from the 0 to 6" below grade interval and adjacent to the stained areas. An additional sample will be taken from 0 to 6" above the water table if needed. Sampling parameters will include TPH and BNA +25. This proposal is acceptable.

#### 15. AOC 15 - PAA/CEP Tank Farm area

Six soil samples were collected in the area adjacent to staining, and analyzed for TPH and BNs. Elevated levels of both were found. One sample was analyzed for PPM. No proposal was found in the report.

In response to the DSPA, BASF proposed to address remediation of the soils in this area after completion of the LNAPL recovery program in which this area is included. Post-remediation sampling will be conducted to ensure completion of cleanup. No further delineation sampling is proposed at this time. This proposal is acceptable.

#### 16. AOC 16 - Former Wastewater Lagoon Area

The lagoons were lined earthen structures used for storage of process wastewater. Fifteen samples were collected and analyzed for TPH, BN +25, PCB, and VO+15. Five samples were obtained at 6 to 12" below grade and 10 samples were obtained at 0 to 6" above the water table. Samples were analyzed for VO+15, BN+15 PCBs, AE and TPHC. TPH, BN's, VO's and PCB were present in the samples. As noted above, all previous results for all areas will need to be re-evaluated before no further action can be approved.

#### 17. AOC 17 - Wastewater Treatment Plant

Four soils samples were collected from areas of apparent staining. Parameters were PCB, pesticides, PPM, VO+15, and BNA+25. BN's were present - no AE's. CaPAH's were present at 2.96 ppm. Pesticides, PPM, PCB, and VOA's were also present.

BASF proposes to address this area in the remedial action work plan.

Post-excavation sampling will be used to confirm that cleanup is complete. No delineation sampling is proposed. This proposal is acceptable.

#### 18. AOC 18 - Former Pilot Plant and Old Tank Farm

Soil samples were taken from the location of a collapsed trench drain and analyzed for PPH, TPHC and BNs. No samples showed contaminant concentrations of concern. As noted above, all previous results for all areas will need to be re-evaluated before no further action can be approved.

#### 19. AOC 20 - Process Warehouse

This warehouse was used for product storage. BASF proposes to visually inspect and photo document the integrity of the concrete and asphalt surfaces in this area. If the integrity is questionable or the removal process indicates an environmental impact a representative sample will be taken and analyzed for TPH and BNA+25. If sampling is needed one sample will be provided form 0 to 6" below grade and 0 to 6" above the water table. This proposal is acceptable.

#### 20. AOC 21 - Railroad Spur

Samples were collected from this area and analyzed for TPHC, BNs and PPM. Sample depth was 0-6" below ballast. BNs ranged from 1.32ppm to 2601ppm, CaPAHs from ND to 13.58ppm and sample AEC21-ADD1E contained 1610ppm arsenic.

The proposal by BASF for no further action in this area is unacceptable.

a. Sample AEC21-ADD1E shall be delineated and/or remediated. The concentrations of individual BNs shall be compared to the attached cleanup criteria and "Cleanup Standards for Contaminated Sites" in order to determine the need for remediation.

#### 21. AOC 23 - Former Stormwater Outfall

Four samples were collected from the outfall. Samples were collected from two locations. Sample parameters were TPHC, BN, AE, PPM and VO+15. BN concentrations were 136ppm and 2971ppm.

BASF states that only one of the four samples collected indicated elevated levels of base neutrals and that these constituents are not soluble and so do not present a potential concern for the adjacent surface water body. The proposal for no further action is unacceptable.

a. Only two samples were analyzed for BNs; the other two were collected at 18-24" and analyzed only for VOs. BASF shall submit an acceptable proposal to address the concentrations of BNs in sample AEC23-ADD2.

#### 22. ABOVE GROUND FUEL OIL TANK, 6000 Gallon, #6 Fuel Oil

The sampling plan shows an above ground fuel oil tank at grid location S200 - W900. The nearest grid sample collected 100 feet away at S200 - W1000 contains TPHC at 14,800 ppm. The Department felt that the AST was a potential source for this contamination and requested verification of its integrity and information regarding the size and contents.

BASF has reported that the integrity of the tank and associated piping was

deemed to be sound during site decommissioning. There were no visible leaks in either the tank or piping. The proposal for no further action is not acceptable at this time. The following information is required in order to determine the need for sampling in this area according to the proposed Technical Requirements:

- a. whether or not the tank was in contact with the ground; and
- b. whether or not the area beneath the tank was paved; if the area beneath the tank was paved, is the area bermed and what is the integrity of the pavement.

#### 23. Sumps K1, K2, K3, K4, and K12

BASF has reported that sumps K1, K2, K4 and K12 are in concrete vaults in good condition with no visible cracks. The no further action proposal is unacceptable at this time. These areas shall be inspected by the case manager.

BASF has reported that sump K3 is in poor condition. The condition of the vault could not be determined. This was a collection sump for process water. BASF shall propose sampling near this sump in a sampling plan addendum.

#### 24. Spill Location Plans 8/90 and 11/91

In response to the DSPA BASF has submitted a updated spill map with revised locations of spills located. This is acceptable.

#### 25. Tank Inventory

BASF has submitted a summary of products used at the site and the tank number, however, there was no site map with the tank numbers on it.

In response to the DSPA, BASF submitted a site map with tank locations keyed to tables that provided tank physical information. This is acceptable.

#### 26. Delineation Sampling

Grid sampling was conducted at 100 foot increments. Analytical parameters were TPHC, PPM and BN+15 (20%). A total of 79 samples were collected from 0-6" below grade. BASF was asked to compare the results of grid sampling to the proposed standards and to delineate sufficiently to show that the worse case scenarios have been identified in each area of concern.

BASF intends to propose cleanup levels that "are applicable to the industrial nature of the facility and to utilize post-remediation sampling to document successful cleanup." BASF contends that "to delineate grid nodes until a decreasing trend has been shown is not realistic for the conditions encountered at this facility due to the varying degree of contamination and diverse nature of the sources."

- a. Site use is not an acceptable rationale for an alternate cleanup standard. The concentrations found in grid samples shall be compared to the attached cleanup criteria and "Cleanup Standards for Contaminated Sites" to determine the need for remediation.
- b. BASF shall confirm that for any sample showing elevated levels of

contamination, particularly in those cases where the contaminant levels do not exceed the cleanup criteria, samples have been collected from any likely nearby source and that the worst case has been identified. The grid sampling as it now stands does not in all cases give clear indication of whether or not contamination exists in a given area.

#### 27. Phase I NAPL Delineation

Forty six test pits were completed at various locations across the facility to delineate the LNAPL present on the GW table. LNAPL was observed in the majority of the test pits, ranging in thickness form 1/8 to 6 inches. Fill materials such as bricks, debris, gravel, fine sands, and concrete were found in the test pits. The pits were refilled with the excavated soil. BASF was required to explain soil handling in this area ( how the soils were handled when they were excavated and again placed into the pits, if segregation of the soils was maintained at all times).

BASF reported that the test pits were conducted one at a time and soil was replaced in the pits so that the last soil removed was the first soil replaced. This response is acceptable.

## 28. Phase II NAPL Delineation - Interim Remedial Measure - Light Non - Aqueous Phase Liquid Recovery Program Work Plan

The LNAPL present on the site has been determined to consist mainly of 95 % Bis(2-ethylhexyl)phthalate and 5 % light oils. BASF has proposed to install recovery trenches perpendicular to GW flow direction and vacuum out the LNAPL floating on the water table. Soils removed from trenches will be aerated and fertilized to promote microbial growth. Recovery of LNAPL will proceed until 0.1 inch of observable product is present in the trench. The soils will then be returned to the trenches from which they were removed. This proposal is conditionally acceptable.

- a. No proposal for post-remediation sampling of soils was submitted. It is required. Soils to be removed from the trenches shall be segregated prior to replacement. BASF shall verify that the soils removed are clean prior to returning them to the trenches. Discrete six inch samples shall be provided. In the event that previous sampling activities are to be used to verify the nature of the excavated soils, BASF shall clearly show the location of these samples in relation to the test pits on the site plan.
- b. Due to the nature of the contaminant it is possible that, where the source of the contamination is from a known underground source, the soils above the water table may be contaminated by residuals. If this is the case, these soils may be segregated and stockpiled separately for appropriate disposal.

#### 29. Bioremediation Treatability Study

The BASF site has unacceptable levels of Bis(2-ethylhexyl)phthalate (BIS) in its soils. A research project has been initiated by a team of researchers from the Department of Chemical Engineering of Rutgers University to evaluate both leaching rates and microbiological degradation of the BIS as a prelude to development of a remedial plan for the site. The Department has reviewed the treatability study for this site prepared by Alexa De et. al., of Rutgers University (Rutgers) and have the following comments and recommendations.

a. Since Bis(2-ethlyhexyl) phthalate (BIS) is highly insoluble and tends to

bind tightly to soil matrixes, Rutgers should have included some spiked recovery data for the analysis of BIS in the matrix in question. If such data is available, please have it included in any revisions of this document.

- b. The batch desorption technique is rather novel and uses a three component system to evaluate processes of the two component soil/water system. Solvent is layered upon a stagnant soil/water system and the solvents high affinity for BIS as compared to water is exploited to monitor the time dependency of the elution of BIS into the aqueous phase. The description of the technique evokes several questions as to its applicability to the soil, water and solvent mixing. A disturbance in the three part system can result in the contact of solvent with soil, thus extracting the soil directly and invalidating the results. Rutgers need to show by data or reference how system disturbance is controlled and monitored. Another point that needs to be discussed is the impact of the solvent on the polarity of the water. In the described system, water is saturated with solvent, thus changing its dissolution properties. These changes may effect the dissolution of BIS from soil and result in data that is not representative of a soil/water system.
- c. The figures illustrating bioremediation are expressed in two different units (millimoles/kg and milligrams /kg). This is an inappropriate means of expressing comparative data and creates doubt as to the integrity of the data. The molar data was converted to mg/kg by using the conversion factor of 390 mg per millimole. Results of this calculation show that the initial concentrations of BIS in the zero time experimental systems range from 800 to 1600 mg/kg (ppm). Poisoned control BIS levels in flasks incubated between 34 and 121 days fluctuated from 5 to 20 times the levels found at the start of the experiment. These control fluctuations invalidate the results and conclusions of the study. Rutgers needs to explain the use of different units and may need to re-evaluate the procedures before attempting additional studies. As currently presented, none of the experimental systems showed a reduction of BIS as compared to the initial BIS introduced into the system. Therefore, acceptance of the biodegradation results and use of this data for subsequent remediation is not recommended at this time.

#### 30. Analytical Data

- a. The base neutrals analytical data for the soils sample FB9867, SAEC1 1, Sample Date 1-18-91 is estimated. Two of the surrogate recoveries were below the acceptable range upon re-analysis of the sample.
- b. The sample FB9033, SS500W500 was re-extracted and reanalyzed due to poor surrogate recoveries. However, the MDL's for the second round of analysis are above the cleanup criteria. BASF shall provide the analytical data from the first round of sampling for review.
- c. The monitoring well sample FB9711, WMW8RD1 ( sample date 1-15-91 ) is qualified for the Volatile Organics and Base Neutral analyses. The MDL's for the sample are elevated due to large sample volume.

#### II. GROUND WATER CLEANUP CRITERIA

Ground Water Quality Standards (N.J.A.C. 7:9-6) referenced in the February 1, 1993 New Jersey Register and Surface Water Quality Standards (N.J.A.C. 7:9-4.1 et seq.).

#### III GROUND WATER CONDITIONS

- A. The Department has reviewed the response to the DSPA. BASF intends to initiate an interim passive LNAPL recovery program prior to complete delineation of all problems in all areas of concern. BASF proposes additional sampling and development of a remedial action work plan to address site wide contamination as the interim recovery program and decommissioning activities proceed. This sampling plan is conditionally acceptable.
- 1. The water table in the trenches must be depressed in order to enhance recovery of LNAPL.
- 2. In order to ensure that product is not flowing into the Passaic River between trenches, hydraulic control of the plume must be demonstrated. Specifically, water level measurements from piezometers, monitoring wells and the trenches must be used to show that hydraulic control is being maintained. A proposal outlining a method of maintaining hydraulic control must be submitted to the Department within 60 days of receipt of this letter.
- 3. Collected water released back into an upgradient trench constitutes a discharge to groundwater and, therefore, requires a NJPDES-DGW permit prior to discharge. An application for the NJPDES-DGW permit (with a copy submitted to the case manager) must be submitted to:

Bureau of Permit Management CN029 401 East State Street Trenton, N.J> 08625-0029

B. AREAS OF CONCERN THAT MAY REQUIRE FURTHER ACTION PENDING THE GATHERING OF MORE SOIL DATA

AOC's 2,3,4,5,7,11,12,13,16,17,20, and 21 have incomplete soil sampling proposals. The decision on the need for additional groundwater investigation in these areas will be deferred until additional soil sampling results are obtained.

C. AOC'S REQUIRING NO FURTHER ACTION FOR GROUNDWATER

#### 1. AOC-10 - Electrical Substation Area

Four transformers exist at this site and are located on a concrete pad. Chip samples were taken and TPH and PCB's were found at low levels.

#### 2. AOC-19 - Former Dyestuff Plant and PAA Flaker

Chip samples were taken from the transformer pad next to the building and PCB's were found at low levels.

#### 3. AOC-23 Former Stormwater Outfall

Soil samples were taken from the area surrounding the former stormwater outfall. There is a NJPDES well within approximately 15 feet of the outfall. There is only minor contamination in this well. Contamination is probably limited to surficial soil samples as it is immediately adjacent to the Newark Bay.

#### D. AREAS OF CONCERN REQUIRING FURTHER ACTION

#### 1. AOC-1 - BUILDINGS 19, 28, and 28A

BASF analyzed four relatively surficial soil samples and one soil boring taken from 0-6" above the water table. The soil boring had levels of 14,800 ppm PHC's and 2086 ppm BN's.

Based upon the results of the additional soil sampling in this area, additional monitoring wells may be required.

#### 2. AOC-24 - Instrument Shop, Environmental Lab and Maintenance Office Area

Chip samples and soil samples were taken from a transformer pad adjacent to the maintenance office building. PCB's were not detected.

\*\*\*NOTE\*\*\* - A test pit was dug near building 10A and a product sheen was recorded in the test pit log. It is unclear why a test pit was done in this area since it is not near a tank farm or process area. BASF shall address this item under soil conditions in the next phase proposal. Based upon the results of any soil sampling in this area additional monitoring wells may be required.

#### 3. AOC-6 - Buildings 23 and 23A Boiler House Area and Basacryl Sump Pit

Only grid sampling was done in this area pending decommissioning. BASF was required to submit (but failed to submit) the construction details/ verification of integrity of the Basacryl Sump Pit. BASF was also required to relocate MW-14 to the area of the Basacryl Sump Pit as per the December 1990 letter. This well was installed at the previously proposed location prior to receiving the above letter and was not installed at this location.

a. BASF shall install a monitoring well immediately adjacent to and downgradient of the Basacryl Sump Pit as required by the December 1990 letter.

#### Rationale:

The Basacryl Sump Pit was to be part of the HSWA permit to be issued to BASF by the EPA since it was used to collect wastewater.

BASF has chosen to locate wells to present an "overall picture" of ground water contamination at the site. Since this sump collected wastewater, it has the potential of being a source area. The pit is most likely below grade and BASF is only proposing to sample it if there appears to be contamination. Rather than waiting for a decommissioning plan and report, this area should be investigated since there is the potential for discharges from this unit whether or not it's integrity is verified.

#### 4. AOC-8 - Batch Ester Tank Farm Area

One soil sampled was taken from 0 - 6" near the location of the former basacryl plant. The tank farm is situated on a concrete slab with a diked containment area. Two test pits were done in the former basacryl plant area (33 and 34). Test pit 34 had no product sheen and the other (33) had a product layer. Four test pits were excavated east of the tank farm containment area. Three of these (36,37, and 38) contained either a sheen or

contained product. The two test pits west of the tank farm containment area (39 and 42) contained product.

BASF proposes to verify the integrity of the concrete secondary containment pad and walls. Soil sampling would only be done if it was determined that underlying soils had been impacted.

Seven test pits are proposed surrounding AOC-8 including two north of the tank containment area between AOC-8 and AOC-9 and one west of the railroad spur which is technically AOC-21.

Please refer to item III A and the soil conditions above on the LNAPL/IRM proposal for Department comments.

#### 5. AOC-9 - Batch Ester Plant Area:

Three soil samples were taken from 0-6", 18" -24", and 0-6" above the water table. Surficial TPH's and BN's were high (22700 ppm and 96.64 ppm respectively). The 18" -24" sample was non-detectable for VOC's. The sample taken from above the water table had 7130 ppm TPH and 36.16 ppm BN.

Three test pits (40,41, and 43) were excavated west of the batch ester plant and all contained measurable product.

No proposal was submitted for soil sampling or groundwater monitoring in the Phase II Sampling Plan. Delineation of free product has not been accomplished in this AOC.

Please refer to item III A and the soil conditions above on the LNAPL/IRM proposal for Department comments.

#### 6. AOC-15 - PAA/CEP Tank Farm

Six surficial soil samples were taken around the PAA/CEP tank farm. This tank farm was used to store a variety of phthalates and levels of TPH and BN are correspondingly high.

Thirty four test pits were excavated around the PAA/DOP tank fields. Six of the test pits (1, 26, 29, 30, 31, and 32) did not contain product or a product sheen. Eleven of the test pits (2, 3, 4, 7, 8, 10, 11, 23, 24, 25, and 28) contained a product sheen. The sixteen remaining test pits (5, 6, 9, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 27, 44, and 45) contained measureable product. Delineation of free product has not been accomplished in this AOC.

Please refer to item III A and the soil conditions above on the LNAPL/IRM proposal for Department comments.

## 7. Interim Remedial Measure For LNAPL Recovery - Work Plan (ATTACHMENT 6)

A. BASF has proposed to initiate an interim passive LNAPL recovery program prior to complete delineation of all problems in all AOCs. BASF has proposed to utilize the recovery of LNAPL as the first phase for the remediation of the facility. BASF has proposed to develop and submit a contingency plan for ground water which will be based on the effectiveness of the IRM. BASF has reported that remedial options for soils contamination are currently being developed and will be submitted in the remedial action work plan following the

completion of the Phase II program. These proposals are acceptable as conditioned throughout this letter.

#### IV ALDITIONAL PROPOSALS

In addition, BASF has submitted the following proposals in response to the DSPA.

1. The proposal by BASF to initiate a tidal monitoring program utilizing four existing monitoring wells and the installation of a still well along the bulk head of the northwest portion of the property is acceptable.

#### 2. Logs of Test Pits

In response to the DSPA BASF has proposed to include information with respect to the amount of measurable product and the tidal fluctuation on future logs for test pits and document this information within the proposed LNAPL/IRM program. This proposal is acceptable.

#### 3. Product Thicknesses in MW's 12, 13, and 16

No depth to product, depth to water table, and product thickness information is given for the above monitoring wells.

BASF shall submit this information in the next sampling plan addendum.

#### 4. Monitoring Well Certification Forms A and B

Neither form was submitted in the sampling plan for monitoring wells M-13, MW-14, MW-15, MW-16, MW-17, and MW-18. In response to the DSPA BASF submitted copies of the monitoring well certification form A's. These are acceptable.

Monitoring Well Certification Forms: Form A (As-Built Certification) and Form B (Location Certification) must be completed for each monitoring well installed. Form A must be submitted within thirty (30) days after completion of each monitoring well. Because additional wells are sometimes required to complete a hydrogeologic investigation, Form B may be submitted after completion of the installation of all required groundwater monitoring wells, unless required prior to that time by the Department.

#### 5. Alternate Design of Monitoring Wells

As stated in the December 1990 letter to BASF, alternate designs for monitoring wells construction will be allowed in areas where there is free product contamination and accessibility of a drill rig is limited pending Departmental approval of the design. In all other areas, the specifications attached to the December 1990 letter will apply.

#### V GENERAL REQUIREMENTS

- 1. BASF shall accomplish this investigation and any further analytical investigations by the methods outlined in the Sampling Plan. If any change in methods outlined in the Sampling Plan is necessary or if any delays are encountered, BASF shall inform BEECRA in writing prior to implementation.
- 2. BASF shall submit the results in triplicate within 90 calendar days of the receipt of this approval. Please note that only one copy of the Quality Assurance/Quality Control Deliverables is needed.
- 3. BASF shall submit summarized analytical results in tabular form. BASF shall also submit with the analytical data all documents associated with the sampling and testing, including, but not limited to, lab sheets, chain of custodies, results of blank analyses, lab chronicles, summaries of analytical instrument tuning and analytical methods used. The NJDEPE recommends that BASF refer to the attached proposed Technical rules for Data Presentation and Proposals for guidance in the preparation of its submittal.
- 4. BASF shall collect all samples in accordance with the sampling protocol outlined in the May, 1992 edition of the "NJDEPE Field Sampling Procedures Manual".
- 5. BASF shall notify the assigned BEECRA Case Manager at least 14 calendar days prior to implementation of all field activities included in the Sampling Plan. If BASF fails to initiate sampling within 30 calendar days of the receipt of this approval, any requests for an extension of the required time frames may be denied.
- 6. BASF shall submit the appropriate fee as required by N.J.A.C. 7:26B-1.10. The enclosed Fee Submittal Form is provided for guidance to determine the fees required; this form shall be completed and returned with the submittal package.
- 7. BASF shall submit the sampling results, along with a data presentation and proposal for further action that is fully supported by that data, pursuant to N.J.A.C. 7:26B-4.3. The proposed Technical rules should be consulted for details on the presentation of analytical data to be prepared for the NJDEPE's review. The proposed Technical rules should also be consulted to ensure the development of a technically and administratively adequate Cleanup Plan pursuant to N.J.A.C. 7:26B-5.3. Clear, concise and complete presentations that meet the minimum requirements of the proposed Technical rules are essential to ensure a complete and timely review by the NJDEPE. Failure to provide documents that meet the minimum guidance of the proposed Technical rules may lengthen the case processing time and may result in the rejection of the document. Technically and administratively incomplete submissions not prepared pursuant to N.J.A.C. 7:26B-3.2, 4.3, and 5.3 may result in the initiation of enforcement action including, but not limited to, the assessment of penalties pursuant N.J.A.C. 7:26B-9.
- 8. If contamination is determined to exist above a level found acceptable by NJDEPE, BASF shall prepare and submit a Cleanup Plan developed pursuant to N.J.A.C. 7:26B-5.3 to address the contamination. If the data from implementation of the approved Sampling Plan indicate the presence of contamination, but is not sufficient to define the full horizontal and

vertical extent, then such areal definition shall be proposed as a Sampling Plan Addendum in a form which meets the criteria of N.J.A.C. 7:26B-3.2(c)11. The horizontal and vertical extent of contamination shall be determined before an approvable Cleanup Plan can be developed.

If you have any questions, please contact the Case Manager, John Graham, at (609) 633-7141.

Sincerely,

Douglas Stuart, Chief

Bureau of Environmental Evaluation and Cleanup Responsibility Assessment

c. Joyce Castro, BGWPA
Deborah Bessen, BEERA
Richard Cawley, O'Brien & Gere Engineers, Inc.

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### Violation and Elimination-Armour-Dial (continued)

Mr. Lubetkin wrote to the company on August 6, 1973, requesting information as to what would be done to prevent a recurrence of this type of accident. Mr. Dandurand, Plant Manager replied August 10, 1973, explaining what had happened and that an "oil dry" would be kept on hand to prevent the results of an accident of this type from reaching the River in the future.

Violation and Elimination-Atlantic Chemical Co., 10 Kingsland Road, Nutley, N. J.

April 28-May 29, 1973

( D. Miele, Jr.)

On April 28, a red color in Third River was traced to this company. Investigation revealed that the dye was seeping from building #13. Mr. Panziger, Vice President, explained that when they had repaired the floor and drainage system last year, they did not realize that there were holes in the concrete floor of the upper section which were covered by steel plates. Apparently, spills and wash-downs drained to an unused basement area. He then assumed that the water table had risen high enough to wash some of the accumulation from this area.

The inspector reported that they have sealed the concrete floors, and in a letter dated May 29, 1973, Mr. Danziger reported that their plumbing contractor, Tames Pecora, installed cast iron drains and piping, and with the floors patched, all process water wasbeing directed to their settling basin.

Violation and Elimination-BASF Wyandotte Corp., 550 Central Ave., Kearny, N.J. 07032
February 10, 1973

(J. Colello)

On Friday, February 9, an order was placed with Eldorado Terminal Corp., Bayonne, N.J., by BASF for five truckloads of 2-ethyl-hexanol, an alcohol, specifying delivery on Saturday, February 10. The capacity of the alcohol storage tank was evidently reached during the deliveries and the capacity of the liquid venting equipment was not sufficient to handle the capacity of the unloading pumps on the truck. The internal pressure increased in the tank and ruptured a welded seam (approx. 2 P.M., Saturday, February 10, 1973) and 2,500 barrels of the alcohol drained into the Passaic River.

The loss was not detected by the company until Sunday, February 11. Observation by BASF personnel failed to detect any surface film or any dead aquatic life in the Passaic River. Apparently, the rate of dissipation by tidal action and wind was of sufficient magnitude so that no detrimental effects were discovered.

### Violation and Elimination-BASF Wyandotte Corp. (Continued)

The following program was instituted by BASF to prevent a repetition of this type of accident.

- 1. Prior written approval required for bulk deliveries.
- 2. Bulk deliveries to be unloaded under supervision of a production employee.
- High-level alarm system to be installed on raw material tanks.
- An adequately sized positive pressure relief device shall be installed.
- An inventory of contents of raw material tanks shall be taken on each shift.

Violation and Elimination-Towns of Belleville and Nutley-Washington Avenue Sewer Break

January 30-February 9, 1973

(D. Miele, Jr.)

When on January 30, 1973, the Nutley sewer department attempted to clear a sewer blockage on Washington Avenue, they discovered a break in the 12 inch sanitary line. They started excavating, meanwhile pumping sewage into a storm catch basin which thence reached the Passaic River via the Nutley-Belleville Storm Sewer. Since there was a 24 inch gas line near the broken sewer and since the sewer required an excavation of approximately 14 feet, it was necessary to get an outside contractor on an emergency basis.

The contractor started to work on January 31, 1973 and had to shore up the side where the gas line was located.

Work was completed by Salerno Contractors of Newark, N.J. on February 9, 1973 at 8:15 P. M. at which time pollution was eliminated.

February 20 -March 7, 1973

(D. Miele, Jr.)

Soon after the repair of the Washington Avenue Sewer, another section of this sewer on Hancox Avenue collapsed. The sewer is jointly owned by the Towns of Belleville and Nutley.

The towns hired Salerno Contractors of Newark to repair the sewer.

The contractor started work and was pumping the raw sewage into the Bellville-Nutley storm ditch which ran into the Passaic River.

On February 26, Mr. Lubetkin wrote to both Nutley and Belleville, asking them to direct the contractor to pump around the break area into the sanitary sewer in order to prevent pollution of the Passaic River. Inspector Miele reported that subsequent to the letter, raw sewage was being pumped around the break into the next sanitary manhole, thus eliminating the pollution. Work on the repair was completed March 7, 1973.

#### NEW CE

The purpose of this report is to evert severe economic loss to

BAST Wyandotte Corporation, its employees, sustaners, and the general

public arising from the result of the surrent international energy

crises:

- 1. By proposing A means of treating the waste water effluent from the Corporation's Kearny, New Jersey Ththalic Anhydride Plant in order that such treated effluent may be discharged to the Kearny municipal sever system rather than be incinerated (as is presently being done) by consuming over one million gallons of fuel oil per year, and,
- 2. By requesting the approval of the Department of Environmental Protection (DEP) to the proposal referenced to in 1, above, either on a permanent basis or for such time as the DEP judges the impresentation of that proposal to be in the best interests of all concerned, and,
- 3. By requesting the DEP to issue such rulings, modifications of permits as may be necessary in order to enable BAST Wyandotte Corporation to implement the proposal referenced to in 1, above.

#### PLANT HISTORY

FAST Corporation commenced construction of a phthalic anhydride

(PA) facility at the Corporation's existing plant site in Rearny, New

Jersey during the Spring of 1970. The Badger Company of Cambridge,

Messachusette was the prime contractor for the \$17 million investment.

Construction was completed and the plant started production in September, 1971 with a design capacity of 130,000,000 pounds of PA/year.

Engineering design is based on technology developed by MASF AG, and has been the design basis of similar plants built by Monranto, Koppers, and Exxon Chemical Company in the last four years. The process involves the partial oxidation with air of orthoxylene in a fixed bed reactor system. Vapors of PA are condensed from the process air stream in a parallel train of product condensors. Product depleted exhaust air is then passed into a tail gas scrubber for removal of residual PA prior to release to the atmosphere. The PA is distilled and shipped to customers in tank cars and tank wagons. (Flow diagram of plant is attached.)

#### ENVIRONMENTAL CONTROL AND STATE MEVIEW

During the early phase of plant design, the New Jersey Department of Environmental Protection reviewed preliminary drawings of the plant. Hesers, Lachard and Bowe of the Bursau of Air Pollution Control advised that an emissions control device would be necessary for compliance with Chapter 7 requirements of the New Jersey Air Pollution Control Code.

In response to Chapter 7 and to comply with R.S. 26:26-9.2 BASI poration undertook a capital investment of \$1,152,000 and instr. A a tail gas scrubber.

Distussions with Mr. Chris Moffman of the Bureau of Mater Pollution Control revealed that direct discharge of untreated scrubber effluent into the municipal sever would not be permitted. At that time, operation and renovation of the municipal treatment plant was under the supervision of the State. Since the Company did not have a pretreatment facility at that time, a \$246,000 waste water incinerator for scrubber effluent was installed.

#### FUEL SITUATION AND EMERGY CONSERVATION

In December, 1973 our primary supplier of fuel oil placed the Company on allocation based on 1972 usage. Our supply situation is strained also by the start-up of the new Palanii dyestuffs plant in 1973, whose requirements are not included in the base year. The above mentioned incinerator consumes over 1 MK gal/year. This represents over 30% of the total fuel consumption of our two largest manufacturing locations in New Jursey.

The Company has an active energy conservation program with group task forces at each of our New Jersey locations. This conservation program has covered our immediate needs, but any further reductions in allocations could result in a plant shutdown. Contracts ith Union employees, seniority rules, and potential loss of customers would create an intolerable situation in our personnel and sales departments.

According to official forecasts for the State of New Jersey, a severe supply situation for fuel oil will continue. Public demands this Spring will force a greater percentage of refinery production to be diverted to light distillates, eg., gasoline. An overall survey made by our Corporate Manager of Energy confirmed that industrial oil will continue in short supply. If the use of fuel oil for PA scrubber water incinerator could be discontinued, fuel savings would insure continued operation of all Company plants in New Jersey.

period binitioning befor to quacherde into the monitolity sever elector. plant and from an exturing dye plant at a rate of 350,000 apider is completed after an investment of \$1,410,000. Effluent from the new water protrestment tacklity for a new dysetalis plant in Kearny was

Discussion: During the third quarter of 1973 an integrated waste Musicipal approval would also be required.

Permit No. 678 for the Palamil Dyseruits Plant may require modification.

megalitement the efficient quality criteria stipulated on State water at the Lourny site.

trestment of dyestuils plant effluent could also pretreet PA Plant scrubber

Proposel: The new waste water facility recently built for pre-

SCHOOLDER ALTERNATIVE TO INCINEDATION

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Pretreat effluent and discharge to City sever.

to coccess on a commercial needs. continued indicate that the reserving process has an encellant chance passery . anothe feeders sai the take product off pullersqueent ing restore of philadile and maleic side of more the section of the encourables of the tall gas ecremen value. The system lavelone became timinable to existe the this three of effectively reducted al seals thinking this sellate a fe mayor samplesed &

#### PERTURATION PLANT PACILITIES

This facility provides physical/chemical methods as upgrade offluent quality prior to entering the Emmissipal sever. (See flow sheet attached.)

The unit operations are as follows:

- 1. <u>Effluy it Equalizations</u> Two lined ponds provide storage capacity for plant effluent. On site storage controls surges in flow rate, provides a more uniform effluent composition, and permits effluent to equilibrate to ambient temperature.
- 2. <u>Moutralisation</u>: Dye Plant effluent 's usually acidic with pH values generally under 2. Continuous treatment is provided by two neutralisation tanks into which caustic soda or milk of lime is metered. Acid addition is also provided if raw effluent has a high pH. Control equipment maintains pH in the range of 6.5 8.5.
- 3. <u>Suspended Solids Removal:</u> Ferrous sulfate and a polyelectrolyte are continuously metered into the effluent to promote florousation of suspended solids. An Eimco clarifier removes suspended solids which are separated from the water by a large vacuum filter. Clarified effluent has a monthly average suspended solids content of under 100 mg/l.
- 4. Activated Carbon Treatment: The effluent is treated with powdered activated carbon for the control of dye color and soluble organics. After contact for an average time of 210 minutes, the suspended carbon is removed with the above mentioned vacuum filter. Treated effluent has a monthly average value of 90 A.P.H.A. color, 100-200 mg/l TOC, and 85-170 ppm BODs.

- 6. Past Markeliantica: After riarification, treated officent anters a final mix test for auditional pli control, if necessary. This "polishing" step has reculted in consistent control of officent pli between the range of 8.4 8.5.
- 6. <u>Recycle Pyston:</u> In the event of process equipment malfunction in staps 1 5 above, treated effluent can be diverted back to the equalization pends. This should loop system prevents untreated effluent from entering the municipal sever while equipment maintenance is underway.

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#### PARTICIATIVENT CAPABILITIES POR SCRUBBER WATER

The degree of pretreatment attainable was avaluated in the laboratory by mixing scrubber water with effluent from the Dyestuff Plants at a ratio of 1.5 5 parts to 300. The mixture was then treated by simulating conditions in the pretreatment plant. The parameter values are listed in Table I. Table II lists the various flow rates involved. These laboratory tests indicate that the various parameters of effluent quality specified on the Permit to Locate the Palanil Dyestuffs Plant would be affected as follows:

<u>pH</u> of pretreated effluent can be maintained between the limits of 6.5 to 8.5. The small incremental increase in volume is well within the neutralization capabilities of the pretreatment plant. <u>Purbidity</u>: PA Plant serubber water, when combined and protrocted with Dyo Plant officent results in a waste water with a turbidity of under 10 Jestson Purbidity units.

No problem with this new officent stream is antisipated with regards to terbidity.

<u>suspended Solids</u>: Present effivent from the pretreatment plant maintains a monthly average concentration of under 100 mg/liter. PA Plant scrubber weter, prior to pretreatment, has a suspended solids concentration of 85 mg/liter. Simulation of treatment in the laboratory results in suspended solids concentrations below 50 mg/liter; therefore, no problems are anticipated with control of suspended matter.

Color: Present Dye Plant effluent has color values in excess of 1,000 A.F.H.A. PA Plant scrubber water averages 900 A.P.H.A. Laboratory simulation of pretreatment with activated carbon reduces combined effluent color to the range of 70 to 130. No major problem with color is anticipated on a full scale.

TOC: Total organic carbon in the scrubber water exists as a soluble component and consists of a mixture of the ammonium salts of maleic and phthalic acids. Scrubber water is discharged from the tail gas scrubber at a rate of 11 gal/min. This r>w effluent has an average TOC of 102,500

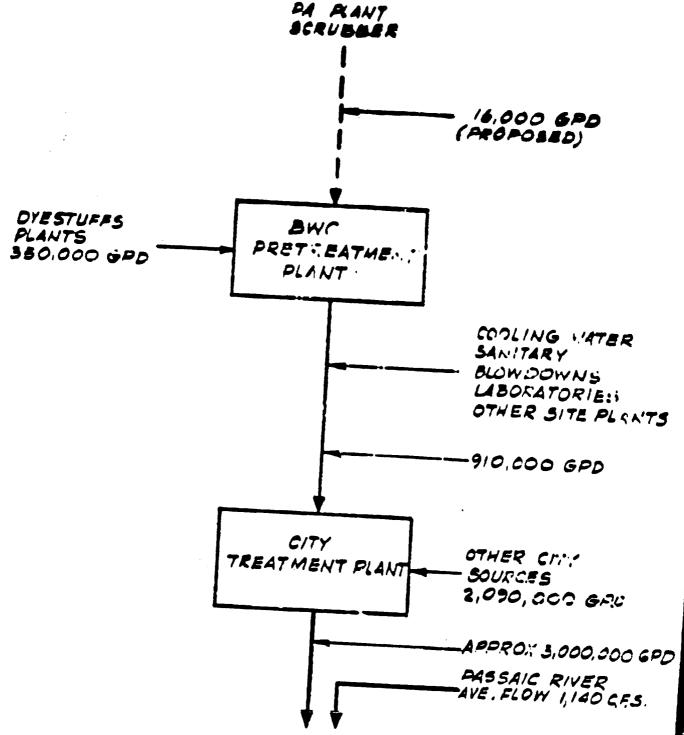
per prior to treatment. Simulation of the Dynatuffs Plant pretreatment feetility reduces this value to 4,000 ppm. The recognized "State of the Art" in controlling soluble organics is activated carbon treatment.

Mosever, the efficiency of earbon absorption is known to decrease when in contact with lower molecular organic compounds. Fortunately, the residual organics present in the effluent after simulating pretreatment are essentially all biodegradable. The combined effluent at was entering the City sever indicated less than 1 pps phenols and chlorinated hydrocarbons are present.

VII

# REQUEST TO THE DEPARTMENT OF ENVIRONMENTAL PROPERTY OF

It is requested that BASF Myandotte Corporation be granted for such time as the Department judges the above proposal to be in the best literests of all concerned, such rulings and or modifications of permits requirel to inchement this fuel oil conservation proposal. It should be noted, however, that the incinerator shall always be available for immediate start-up if problems develop with respect to the pretreatment proposal outlined above.



DISCHARGE TO NEWARK BAY APPROX. 738 MM GPD

843860080

1/30/74

### ALTERNATI METRODY OF BISPORAL

The following alternate methods of disposal of scrubber water offluent were reviewed:

". Dissontinue use of Tail Gas Scrubber.

Propossi: Pypess of the scrubber and direct venting of plant tail gas to the aumosphere would eliminate the effluent stream.

Requirement: A variance would be required from the State PEP's Pureau of Air Pollution Control before release of uncontrolled emitations.

Discussion: The Reality, New Jersey Philaire Anhydride Plant is located in the New Jersey-New York-Connecticut Air Quality Control Region. On April 6, 1973 New Jersey was informed that hydrocarbon emissions in the New Jersey section of the ACCR must be reduced 69%. The Department of Environmental Protection is now under a Federal Mandate to implement control strategies to attain ambient air quality standards by May 31, 1975. In view of the circumstances, a request for a variance permitting the uncontrolled venting of hydrocarbons would be denied by the DEP.

2. Remove Organics by Distillation.

Proposal: Scrubber water effluent could be stripped of organic constituents by fractional distillation.

Requirements: A stainless steel distillation column of adequate size.

Discussion: Distillation would attain a waste water stream essentially free of organic matter and acids. The major problem

4. Treat Officent by Reverse Conscie

<u>Proposal:</u> Beverse Commonis is empable of generating water of potable quality.

<u>Remuirements:</u> Process equipment containing a permeable ambrance system compatible with the feed stream.

<u>Discussion:</u> Vendors of reverse compais process equipment have verified that this technology can generate a high purity stream. However, it was recommended that alternatives, rather than reverse compais, be considered. Reasons given were at follows:

- a. Energy required to develop the high pressure drop across a membrine would be excribitant where separated acrosss are not of high value.
- b. The reject stream from reverse comosis would contain all the components in the scrubber feed water. A method of disposal would still be required for the reject stream such as incineration. Therefore, no saving in energy would be attained.

with distillation is that the organic sempenents in the water water are high holling point sempeneds. Not result being that sether than strip organics from the mater water, all the water would have to be distilled out of the effluent, leaving consentrated organics in the reboiler which would require a disposal method. Time required to design and sustant fabricate a stainless steel distillation column is estimated at 8-12 months. Neat balance calculations indicate that a speer amount of oil presently consend for incineration would be required for distillation. This partical failed to meet the objective, fuel conservation, and was rejected.

3. Direct Di .. harge to Receiring Maters

Proposal: Scrubber effluent could be diverted directly to Newark Bay thereby circumventing the Municipal Ordinance.

Requirements: Application to the Pederal EPA for a discharge pormit under the N.P.D.E.S. (40 CER parts 124 & 125) would be necessary.

Discussion: Diversion of scrubber effluent could be accomplished without installation of any process equipment and could be implemented in a very short time. However, this effluent has a low pH, odor, organics, suspended matter, BCD, and color in high concentration. The possibility of receiving Federal and State approval for the uncontrolled discharge of this effluent is negligible. In addition, a localized odorous and highly colored concentration would be of unacceptable quality for direct discharge.



DRAFT

CN 028 Frenton, N.J. 08625-0028 ---<del>----(608)633-1408</del>

### State of New Jersey

#### DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

Michele M. Putnam
Deputy Director
Hazardous Waste-Operations

John J. Trela, Ph.D., Director

Lance R. Miller
Deputy Director
Responsible Party Remedia! Action

IN THE MATTER OF : NOTICE OF FINAL DENIAL BASE CORPORATION : OF A

50 CENTRAL AVENUE : HAZARDOUS WASTE INCINERATOR

HUDSON COUNTY : PERMIT APPLICATION

KEARNY, NEW JERSEY 07032 EPA ID No. NJD 046 941 530

This is to notify you that pursuant to the Solid Waste Management Act (hereinafter "the Act"), N.J.S.A. 13:1E-1 et seq., specifically N.J.S.A. 13:1E-5 and 13:1E-133, and the the rules promulgated thereunder, N.J.A.C. 7:26-1 et seq., specifically 7:26-12.3, the Department of Environmental Protection (hereinafter, "DEP" or "the Department") hereby DENIES the hazardous waste facility permit application for a hazardous waste incinerator (hereinafter, "PAA incinerator" or "the incinerator") dated August 1985 submitted by BASF Corporation (hereinafter, "BASF" or "the facility") along with revisions dated October 1985 (Revision #1), June 1987 (Revision #2), March 1988 (Revision #3), and November 1988 (Revision #4).

#### FINDINGS

- 1. BASF is the operator of a hazardous waste incinerator, located at 50 Central Avenue, Kearny, Hudson County, New Jersey, 07032.
- 2. BASF's Chemicals Division has been operating a hazardous waste incinerator since July 19, 1971. The NJDEP Division of Environmental Quality, Bureau of Air Pollution Control, granted a Permit to Construct, Install or Alter Control Apparatus or Equipment on February 19, 1970, and granted a Certificate to Operate Control Apparatus or Equipment for the incinerator on July 9, 1971.
- 3. On August 8, 1980, BASF notified the United States Environmental Protection Agency (USEPA) that it was an operator of a treatment and storage facility for hazardous waste.
- 4. BASF submitted a Part A Hazardous Waste Facility Permit Application to the USEPA for the facility certified by the operator on November 19, 1980. The Part A Application listed hazardous waste activities as storage in containers and the treatment of hazardous waste by incineration with a design capacity of six (6) tons per hour.

- 5. On December 18, 1984, the Department forwarded a letter to BASF requiring the facility to complete a Hazardous Waste Facility Permit Application. BASF was required to submit the complete application no later than July 18, 1985. In addition, representatives of BASF and the Department scheduled meetings for February 15, 1985, and May 17, 1985, to discuss preparation of the application.
- 6. On March 5, 1985, BASF forwarded a letter to the Department requesting an extension on the time limit for submitting the permit application. The Department determined that the request for an extension was premature and, in a letter dated April 8, 1985, required the facility to proceed with the application preparation in anticipation of a June 18, 1985, due date. However, BASF was informed that the Department would be open to reasonable extension requests in the future.
- 7. In a letter to the Department, dated May 21, 1985, BASF requested a thirty (30) day extension for submittal of the complete application. The Department forwarded a letter to the facility on May 29, 1985, granting an extension to July 18, 1985.
- 8. On June 28, 1985, BASF forwarded a letter to the Department, requesting an additional extension on the date for submitting the complete application. The Department forwarded a letter to the facility on July 3, 1985, granting an extension to August 9, 1985.
- 9. On August 9, 1985, the Department received the Hazardous Waste Facility Permit Application from BASF. At that time, the Department proceeded to review the application for administrative completeness.
- 10. During the review of the application submitted by BASF, Department representatives discovered some deficiencies. A letter was forwarded by the Department on September 3, 1985, informing BASF of the deficient items. The facility was given thirty (30) days to submit information to correct the deficiencies. In addition, on September 18, 1985, representatives of BASF and the Department held a meeting to discuss the deficiencies.
- 11. On September 23, 1985, BASF forwarded a letter to the Department requesting an extension for submission of the information needed to correct the aforementioned deficiencies. The Department forwarded a letter to BASF on September 30, 1985, granting the extension to October 23, 1985.
- 12. The Department received the requested additional information from BASF on October 22, 1985. At that time, the Department continued to review the application for administrative completeness.
- 13. During the review of the Hazardous Waste Facility Permit Application, the Department determined that the application was administratively complete in compliance with N.J.A.C. 7:26-12.1 et seq. On December 2, 1985, the Department forwarded a letter to BASF informing them of the determination.

- 14. In the December 2, 1985, letter to BASF, the Department informed the facility that a review of the application would be made to determine technical completeness.
- 15. To assist the Department in determining if the permit application was technically complete, six (6) additional copies of the application were requested in the aforementioned letter. BASF was given thirty (30) days to submit the additional copies. The additional copies were received on January 6, 1986.
- 16. During the review of the application submitted by BASF, Department representatives discovered some technical deficiencies. A letter and Notice of Deficiency (NOD) was forwarded to the facility on March 4, 1987, informing them of the deficiencies. The facility was given thirty (30) days to submit information to correct the deficiencies. In addition, on March 17, 1987, representatives of BASF and the Department held a meeting to discuss the deficiencies.
- 17. On March 30, 1987, BASF forwarded a letter to the Department requesting a sixty (60) day extension for submission of the information needed to correct the technical deficiencies. The Department forwarded a letter to BASF on April 30, 1987, granting a thirty (30) day extension. However, the facility was informed that an additional fifteen (15) day extension could be granted if BASF made reasonable progress on preparation of the additional information.
- 18. On May 28, 1987, BASF forwarded a letter to the Department requesting a fifteen (15) day extension for submission of the requested additional information.
- 19. On June 22, 1987, the Department received BASF's revised application in response to the March 4, 1987 technical NOD.
- 20. During the review of the revised application submitted by BASF, Department representatives discovered further technical deficiencies. A letter and second NOD was forwarded to the facility on January 21, 1988, informing them of the deficiencies. The facility was given thirty (30) days to submit information to correct the deficiencies. In addition, on February 10, 1988, representatives of BASF and the Department held a meeting to discuss the deficiencies.
- 21. On February 12, 1988, BASF forwarded a letter to the Department requesting a thirty (30) day extension for submission of the information needed to correct the deficiencies. The Department forwarded a letter to BASF on March 16, 1988, granting a thirty (30) day extension. In addition, the Department informed the facility that no further extensions would be granted for the January 21, 1988, NOD.
- 22. On March 22, 1988, the Department received the facility's revised application in response to the January 21, 1988, technical NOD.
- 23. On May 17, 1988, the Department forwarded a letter to BASF denying the facility's air permit application for the PAA incinerator. The air

application, which was based on calculations provided by BASF, was denied for the following reasons:

- a. The PAA incinerator was emitting particulates, sulfur dioxide and hydrogen chloride in excess of the emissions allowed by the New Jersey Administrative Code.
- b. The incinerator was emitting ammonia, which would be reduced if the incinerator had the controls required by the Law on Permits (N.J.S.A. 26:2C-9.2 and N.J.A.C. 7:27-8).
- c. The air permit application indicated carbon monoxide would not be emitted from the incinerator. The Department informed BASF that it would be unlikely that the incinerator would not emit carbon monoxide.
- d. The air permit application failed to list organics or total hydrocarbons as air contaminants from the incinerator. The Department informed BASF that these contaminants must be included and quantified in the air permit application.
- 24. On July 19, 1988, the NJDEP, Division of Hazardous Waste Management, issued an Administrative Order/Notice of Civil Administrative Penalty Assessment (AO/NCAPA) to BASF. Specifically, based on calculations provided by BASF, the Department found BASF to be in violation of N.J.A.C. 7:26-11.5(a)4 and 5 for exceeding the emissions for sulfur dioxide and hydrogen halides from the PAA incinerator. BASF was issued a penalty of \$13,000 in this AO/NCAPA.
- 25. During the continued review of the revised permit application submitted by BASF, Department representatives discovered further technical deficiencies. A letter and third NOD was forwarded to the facility on August 15, 1988, informing them of the deficiencies. The facility was given thirty (30) days to submit information to correct the deficiencies.
- 26. On August 10, 1988, representatives of BASF and NJDEP held a meeting to discuss the July 19, 1988 AO/NCAPA. During this meeting, representatives of BASF agreed to submit a time schedule for performing the following items with respect to the PAA incinerator:
  - a. sampling the PAA distillation residue, DOP lights, MX organics and scrubber water waste streams.
  - b. submitting the samples to a laboratory for analysis.
  - c. submitting a revised air permit application.
  - d. submitting protocol for a trial burn.
  - e. submitting a trial burn plan.
  - f. performing a trial burn.

This time schedule was received on August 19, 1988.

- 27. On September 7, 1988, representatives of BASF and the Department held a meeting to discuss sampling and analysis protocol for the aforementioned waste streams. During this meeting, BASF agreed to sample the PAA distillation residue, DOP Lights, MX Organics and scrubber water waste streams on the week of September 12, 1988. It was also agreed that sampling would be done at a time when a representative from the Department could be present to audit the sampling procedures.
- 28. During the September 7, 1988, meeting, representatives of BASF agreed to submit the samples to a Department certified laboratory for analysis. In addition, it was agreed that the laboratory would be instructed to analyze the samples for the parameters listed in table 3-2 of the waste analysis plan contained in BASF's Part B Permit Application. The methods to be used for the analyses were those listed in table 3-3 of the waste analysis plan. In addition, the samples were to be analyzed for total metals using EPA method SW 846.
- 29. On September 13, 1988, BASF conducted the sampling. A representative of the Department was present to witness the sampling procedures.
- On September 20, 1988, a telephone conversation was held between a NJDEP and BASF representative. During this conversation the BASF representative stated that the aforementioned sampling was completed during the week of September 12, 1988. Specifically, he stated that on September 13, 1988, samples were collected from the PAA distillation residue, DOP lights, MX Organics and scrubber water waste streams. During this time, samples were also collected from the fuel oil and According to the BASF representative all of the city water sources. samples were submitted, for analysis, to a Department approved New Jersey laboratory on the same day. Additional samples were collected from the scrubber water and PAA distillation residue waste streams on September 14, 1988, and from the scrubber water on September 15, 1988. The BASF representative stated that, samples collected on September 14 and 15 were submitted to the aforementioned laboratory on September 15, 1988.
- 31. During the September 20, 1988, telephone conversation, the BASF representative stated that the laboratory was instructed to analyze the samples using the parameters and methods contained in a letter forwarded to the Department on September 12, 1988. The BASF representative stated that these parameters and methods conform to those contained in Tables 3-2 and 3-3 of the facility's waste analysis plan.
- 32. On October 3, 1988, representatives of BASF and the Department held a meeting to discuss protocol for a trial burn for the PAA incinerator.
- 33. On October 6, 1988, representatives of BASF and the Department held a meeting to discuss the August 15, 1988 technical NOD.

34. On November 1, 1988, the Department served BASF with an Administrative Consent Order and advised the facility to return the signed document by November 9, 1988.

Under the Administrative Consent Order, BASF agreed to:

- a. Submit laboratory data packages from sample analysis by November 4, 1988;
- b. Pay the penalty of \$13,000 assessed in the July 19, 1988, AO/NCAPA if results of sample analysis confirm the violations;
- c. Submit a revised Air Permit Application, QA/QC protocol for trial burn tests, and a revised trial burn plan for the PAA incinerator by November 11, 1988; and
- d. Conduct the trial burn for the PAA incinerator within fourteen (14) days after issuance of the trial burn permit.
- 35. BASF representatives signed the Administrative Consent Order on November 9, 1988, and forwarded the document to the Department.
- 36. BASF submitted to the Department a revised Part B permit application and a revised trial burn test plan dated November 11, 1988.
- 37. The Department prepared a draft trial burn permit on January 4, 1989, and circulated it to BASF, USEPA, and DEP's Division of Environmental Quality, Air Quality Engineering and Technology for review and comment.
- 38. The New Jersey Solid Waste Management Act requires the Department to conduct public hearings on all proposed final permits, and the New Jersey Hazardous Waste Management Regulations of N.J.A.C. 7:26-12.12 obligate the Department to provide for at least 45 days public comment on all draft permits and at least 30 days notice of all public hearings. The law and regulations also obligate the Department to provide written response to all pertinent comments raised at the public hearing or during the public comment period before a final action on the draft permit is executed.

On January 13, 1989, NJDEP notified BASF that the facility must submit to the Department a technically complete Part B application, including results of a successful, approved trial burn, by April, 1989 in order to provide adequate time for review of results, permit preparation, and public participation to comply with the Hazardous and Solid Waste Amendments (HSWA) of 1984 to the Federal Resource Conservation and Recovery Act (RCRA) mandate that the RCRA permitting agencies reach a final determination to issue or deny RCRA permits for all interim status hazardous waste incinerators by November 8, 1989.

39. The Department, using the comments that were obtained as a result of the circulation of the draft trial burn permit, issued a finalized trial burn permit on March 31, 1989, with an effective date of April 7, 1989, and an expiration date of April 21, 1989.

40. The Department, in accordance with the Performance Standards set forth in N.J.A.C. 7:26-10.7, requires that a hazardous waste incinerator must operate in accordance with the "Permit to Construct, Install or Alter Control Apparatus or Equipment and Certificate to Operate Control Apparatus or Equipment" as required by the DEP's Division of Environmental Quality. BASF's permit and certificate for the hazardous waste incinerator include the following emission limitations:

AIR CONTAMINANTS	AMOUNTS OF CONTAMINANTS
Particulates	<2.60 lbs./hr. (0.1 gr/dscf - 12% CO <sub>2</sub> - wet & dry catch) (0.08 gr/dscf - 7% O <sub>2</sub> - dry catch only)
Sulfur Oxides	<3.90 lbs./hr.
Hydrocarbons	<0.30 lbs./hr.
Carbon Monoxide	<0.35 lbs./hr.

- 41. USEPA's Hazardous Waste Regulations, Subpart O-Incinerators, 40 CFR Part 264.343(C), Performance Standards specify that an incinerator burning hazardous waste shall not emit particulate matter in excess of 0.08 grains per dry standard cubic foot when corrected for the amount of oxygen in the stack gas. The Department maintains equivalency to this federal standard through the permit and certificate required by the DEP's Division of Environmental Quality pursuant to N.J.A.C. 7:27-8.
- 42. A trial burn was conducted by BASF, their consultant, NUS Corporation, and subcontractor, METCO Environmental, on BASF's hazardous waste incinerator for four consecutive days, April 19, 1989, through April 22, 1989. During this time period, four (4) runs were completed for hazardous waste test case #1, incineration of PAA distillates and scrubber water concurrent with No. 6 fuel oil.
- 43. BASF submitted trial burn test results dated May 22, 1989, to the USEPA, and the DEP for review.

Review of the results show that the incinerator did not meet the following performance requirements:

#### a. Particulates

Particulate emission rates exceed permitted limits for all runs reported. Rates varied from 11.13 to 19.14 lbs./hr.

#### b. Sulfur Oxides

Sulfur oxides emission rates exceeded permitted limits for all runs reported. Rates varied from 5.30 to 5.60 lbs./hr.

#### c. <u>Total Hydrocarbons</u>

Total hydrocarbons emission rates exceeded permitted limits for all runs reported. Rates varied from 0.35 to 1.44 lbs./hr.

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#### d. Carbon Monoxide

Carbon monoxide emission rates exceeded permitted limits for all runs reported. Rates varied from 0.36 to 1.04 lbs./hr.

44. Regulations of the Department promulgated pursuant to the Solid Waste Management Act, specifically N.J.A.C. 7:26-12.7(a)3, provide that causes for terminating a permit during its term or for denying a permit application include " a determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination".

#### CONCLUSION

45. Be advised that pursuant to N.J.A.C. 7:26-12.11 and 12.12, the Department has issued a notice of intent to deny BASF's Part B permit application with respect to the incinerator portion of same and issued the public notice that stated the Department had tentatively denied BASF's hazardous waste incinerator permit application. Therefore, the Department is now proceeding with its Final Denial.



46. Based upon the above FINDINGS, it is the determination of the Department that the facility endangers human health and the environment; additionally, the facility did not submit a technically complete Part B application providing adequate time for preparation, public participation, and issuance of a final permit by the November 8, 1989 mandate of the RCRA HSWA amendments. Thus, pursuant to N.J.S.A. 13:1E-5, N.J.S.A. 13:1E-133, N.J.A.C. 7:26-12.7(a)3, and the Hazardous and Solid Waste Amendments of 1984, the Department HEREBY DENIES BASF Corporation's hazardous waste incinerator permit application.

Date

Frank Coolick, Assistant Director Hazardous Waste Regulation Element

EP48/slw

DOCUMENT: BASF14 FOLDER: SLWMCB